I 1
6-14-01

EPA Region 5 Records Ctr.
356593

SITE ASSESSMENT REPORT
CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

Prepared for

U.S. ENVIRONMENTAL PROTECTION AGENCY
Region 5 Emergency Response Branch
77 West Jackson Boulevard
Chicago, IL 60604

TDD No.:	S05-0012-003
Date Prepared:	14 Jun 01
Contract No.:	68-W-00-129
Prepared by:	Tetra Tech EM Inc.
START Project Manager:	Lee Christenson
Telephone No.:	(312) 946-6457
U.S. EPA Remedial Project Manager:	Jon Peterson
Telephone No.:	(312) 353-1264

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

FIGURES

TABLES

1.0 INTRODUCTION

The Tetra Tech EM Inc. Superfund Technical Assessment and Response Team (START) has prepared this draft site assessment report in accordance with the requirements of Technical Direction Document (TDD) No. S05-0012-003 issued by U.S. Environmental Protection Agency (U.S. EPA). The scope of this TDD was to conduct site assessment activities for the Celotex Corporation (Celotex) dump site in Wilmington, Illinois. START was tasked to prepare a health and safety plan and field sampling plan and to conduct field sampling activities, including collection of groundwater, surface water, sediment, and waste samples. START prepared a written description of field activities (see Appendix A), documented on-site conditions with still camera photographs and written logbook notes (see Appendices B and C respectively), reviewed analytical data (see Appendix D), and prepared this site assessment report. This report discusses site background information, site assessment activities, and analytical results and presents a summary of the site assessment. References are presented at the end of the text.

KENNETH THEISEN

07/05/01 03:29 PM

To: KAREN VENDL/R5/USEPA/US@EPA
cc:
Subject: Review of the Site Assessment Report fot the Celotex Corporation Dump Site

I read the above site assessment and agree with your position that the data simply does not warrent a time critical removal action.

The levels of both arsenic and lead in the groundwater in the wells GW-2 and 3, would pose a problem if they were in residential wells. I presume that the neighborhood to the east is on city water and the direction of groundwater flow is toward the creek or the river, away from the homes.

If the levels of sediment contamination were higher, one might worry about errosion into the river and some sort of errosion control might be in order. But currently, that threat doesn't exist either.

With the data presented, in my opinion, there is no imminent or substantial threat to human health and/or the environment at this site.

2.0 SITE BACKGROUND

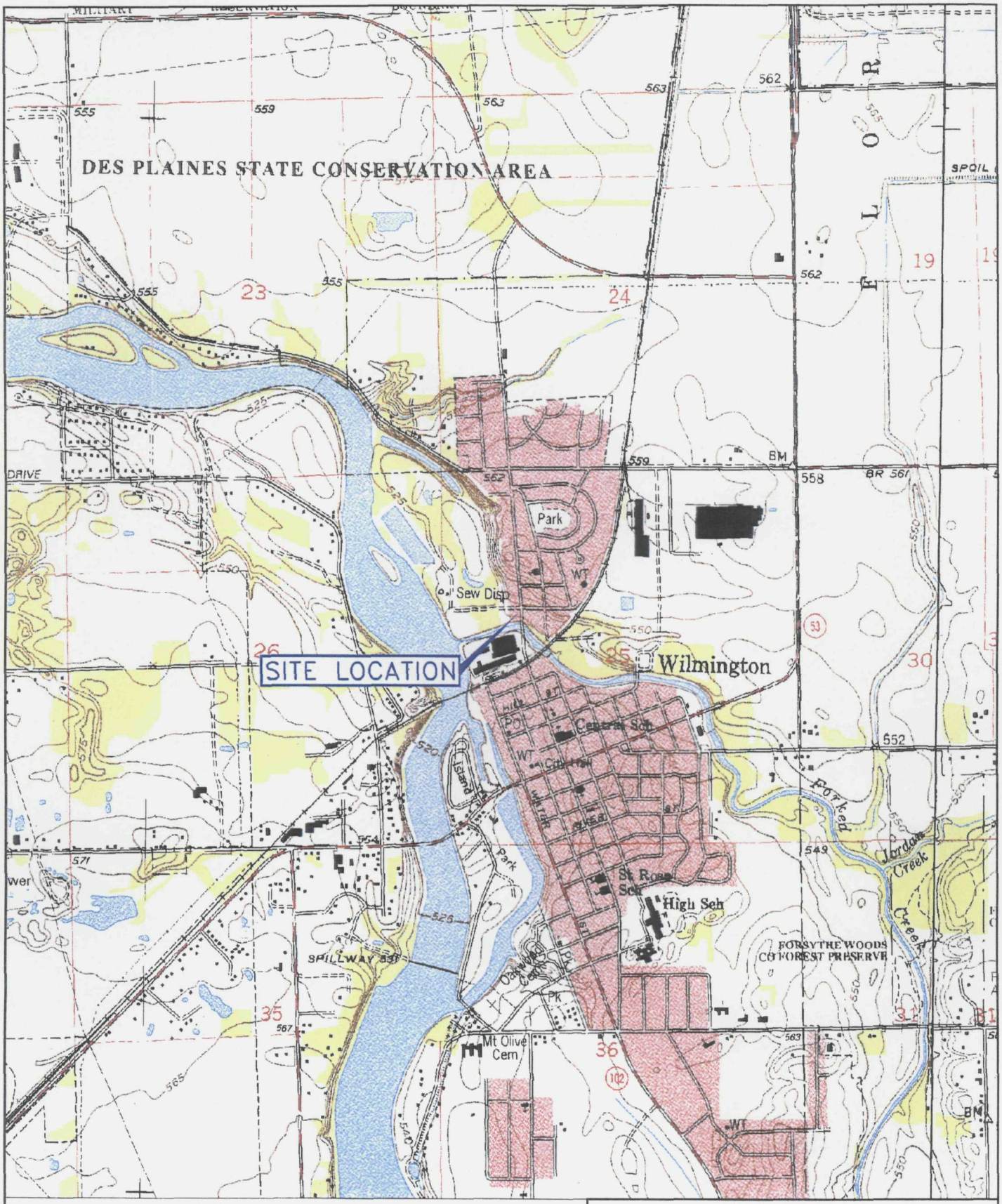
2.1 SITE DESCRIPTION

The Celotex site is located at the intersection of Kankakee and Stewart Streets in Wilmington, Illinois (see Figure 1). The site is bordered by Forked Creek to the south private residences to the north, Stewart Street to the east, and the Kankakee River to the west. The site occupies approximately 40 acres and contains two landfills, several on-site ponds, two surface depressions, and lowland areas that retain water seasonally. Elevations at the site range from approximately 550 feet above mean sea level (amsl) in fill areas to 525 feet amsl in flood plain areas located near the Kankakee River. Site access is unrestricted.

2.2 SITE HISTORY

The Celotex site's history was researched through reviews of aerial photographs of the site area and previous investigation reports. Celotex operated a roof shingle manufacturing facility at the site from approximately 1955 to 1980. Sand, asphalt, and felt paper were used in the manufacturing process. Wastes generated from the production process included tar paper; off-specification roof shingles; and sludge generated from recycling of rags, wood pulp, and paper. Other wastes generated included waste oil and materials used to clean up spills occurring during the manufacturing process. Wastes generated at the site were disposed of in the two on-site landfills and one surface depression. The on-site landfills have been inactive since 1980 (Illinois Environmental Protection Agency [IEPA] 1995).

On 9 Aug 88, IEPA completed a preliminary assessment (PA) of the Celotex site. IEPA's PA report documented the presence of oil, iron, asphalt, and recycling sludge at the site and the lack of final cover on the landfills. The PA report also documented the presence of 270 parts per million (ppm) of iron and 2.4 ppm of boron in the surface waters of the Kankakee River and an adjacent creek. In addition, the PA report noted that the landfills were operated by Celotex under the *Illinois Administrative Code* Section 21(e) exemption from solid waste permitting (IEPA 1988).



CELOTEX CORPORATION DUMPSITE
WILMINGTON, ILLINOIS

FIGURE 1
SITE LOCATION MAP

SOURCE: MODIFIED FROM USGS 1993

Tetra Tech EM Inc.

On 20 and 21 Nov 89, IEPA conducted a screening site inspection (SSI) at the Celotex site. During the SSI, soil, groundwater, and surface water samples were collected for analysis for volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides, metals, and polychlorinated biphenyls (PCB). Soil samples were collected from six surface locations and two subsurface locations in the flood plain and the two surface depressions. The soil sampling analytical results indicated the presence of no VOCs and trace concentrations of three SVOCs: fluoranthene, phenanthrene, and pyrene. One soil sample also contained PCBs at 550 parts per billion (ppb), dibenzofuran at 50 ppb, and benzo(a)pyrene at 670 ppb. However, IEPA determined that these compounds did not pose a risk to human health or the environment at the concentrations detected (IEPA 1989).

Groundwater samples were collected from three temporary monitoring wells during the SSI. The only contaminant of concern identified was arsenic, which was detected at a concentration of 51 ppb at one monitoring well. This concentration barely exceeded the Ecotox Threshold limit of 50 ppb. Neither of the two surface water samples collected from Forked Creek and the Kankakee River indicated the presence of any contaminants of concern (IEPA 1989).

In Sep 95, IEPA completed a site inspection prioritization (SIP) at the site. The SIP report included analytical results for 10 sediment samples collected from Forked Creek, the Kankakee River, on-site ponds, and an on-site surface impoundment. The sediment samples were analyzed for dioxins, furans, and metals. Two sediment samples contained dioxins: one sample contained 10 ppb of 1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin (OCDD), and the other sample contained 2.8 ppb of OCDD and 8.7 ppb of 1,2,3,4,6,7,8,9-octachlorodibenzofuran (OCDF). Sediment samples also contained 5.3 to 27.7 ppm of copper that slightly exceeded the Lowest Effect Level for aquatic organisms (IEPA 1995).

In May 97, IEPA completed a site team evaluation prioritization (STEP) at the site. As part of this STEP, seven soil samples and one groundwater sample were collected at the site. One soil sample contained lead at 79.2 ppm, cyanide at 17.9 ppm, dieldrin at 10 ppb, and PCBs at 3.4 ppm. The groundwater sample contained no contaminants of concern (IEPA 1997).

3.0 SITE ASSESSMENT ACTIVITIES

Site assessment activities at the Celotex site included a site reconnaissance and sampling. Each activity is discussed below.

3.1 SITE RECONNAISSANCE

On 2 Feb 01, the U.S. EPA remedial project manager (RPM), Jon Peterson, and START mobilized to the site, where they met with representatives of Celotex and IEPA. Celotex granted U.S. EPA, IEPA, and START access to the property in order to assess site conditions and identify potential sampling locations.

During the site reconnaissance U. S. EPA, IEPA, START, and Celotex representatives conducted a walk-through of the site. During the walk-through, U. S. EPA and Celotex discussed and identified potential groundwater, surface water, and sediment sampling locations. START marked these locations with labeled orange flags.

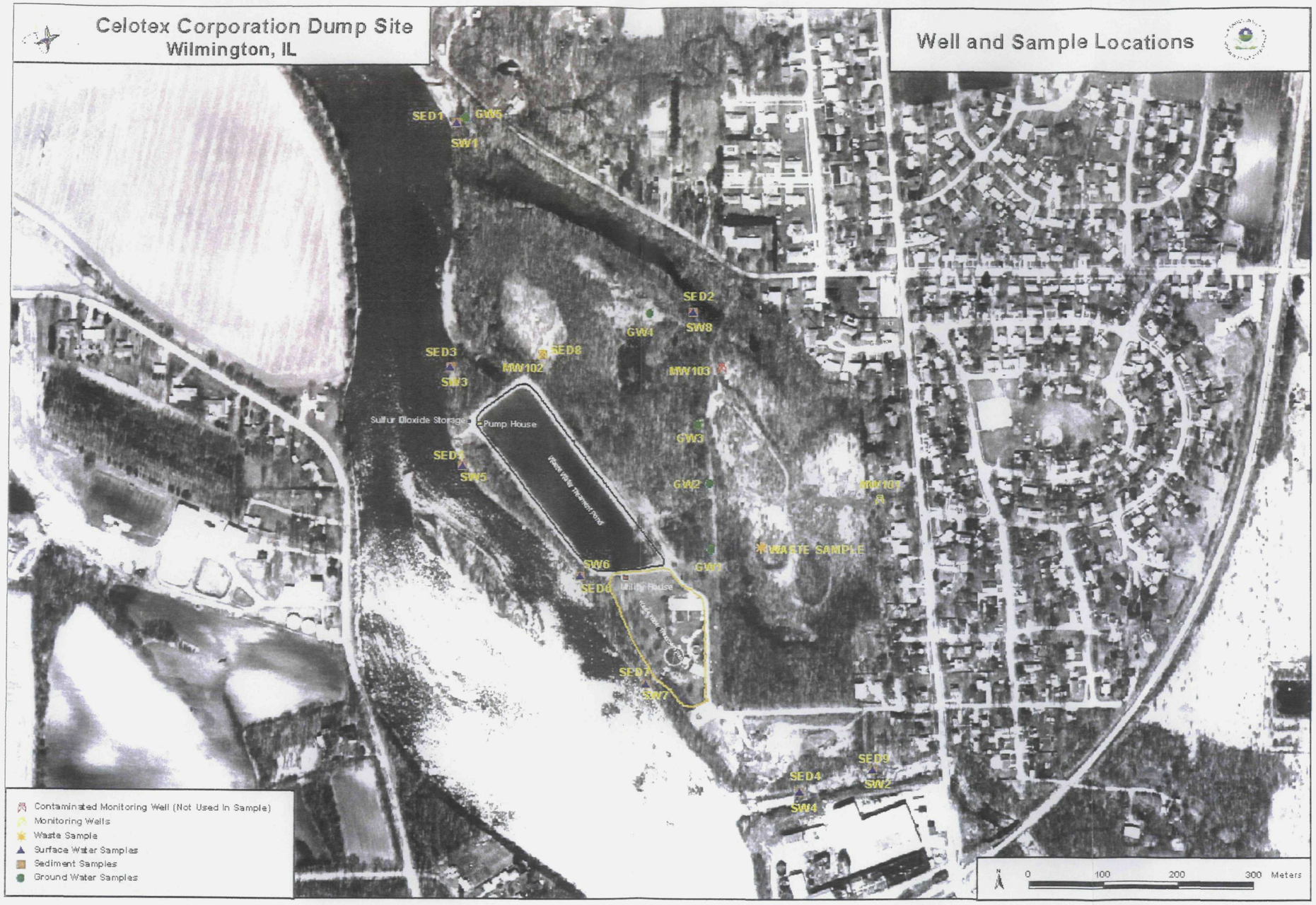
U.S. EPA and Celotex identified six groundwater sampling locations. At five locations, groundwater samples were to be collected using a Geoprobe, and at one location, a pre-existing monitoring well was to be sampled using a bailer. U. S. EPA and Celotex also identified seven surface water sampling locations and eight sediment sampling locations. The seven surface water sampling locations were to be co-located with sediment sampling locations. Five of the surface water and sediment sampling locations were in the Kankakee River, one location was in Forked Creek adjacent to the Celotex site, and one location was in a slough on the site property. The remaining sediment sampling location was near existing monitoring well MW-102. In addition to sampling environmental media, U.S. EPA requested that one sample be collected from the gray waste material located in a surface depression on the site property. After discussing collection of the waste sample, U.S. EPA and Celotex agreed to its collection. It was also agreed that sampling activities would take place from 7 through 9 Feb 01.

On 6 Feb 01, the U.S. EPA RPM informed START that Celotex representatives had requested

that two additional existing groundwater monitoring wells and one additional co-located surface water and sediment location in Forked Creek be sampled. U.S. EPA had agreed to this request, and START modified the sampling plan accordingly. All sampling locations are presented in Figure 2 of this report. A written description of all field activities are provided in Appendix A of this report.

Celotex Corporation Dump Site
Wilmington, IL

Well and Sample Locations



SOURCE: FIGURE PROVIDED BY U.S. EPA REGION 5

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

FIGURE 2
WELL SAMPLE LOCATIONS

Tetra Tech EM Inc.

4.0 ANALYTICAL RESULTS

This section presents and discusses the analytical results obtained for the samples collected at the Celotex site. Results for samples collected at temporary groundwater monitoring points are listed in Table 1. Results for samples collected from monitoring wells are listed in Table 2. Results for surface water samples are listed in Table 3. Results of sediment sample metal analyses are listed in Table 4. Results of sediment sample dioxin and furan analyses are listed in Table 5. Results for the waste sample analyses for metals and dioxins and furans are listed in Table 6. Results for equipment rinsate blanks results are listed in Table 7.

TABLE 1

GROUNDWATER SAMPLE ANALYTICAL RESULTS

		SAMPLING LOCATIONS										
ANALYTE	MCL	GW-1 (F)	GW-1	GW-1 (D)	GW-2 (F)	GW-2	GW-3 (F)	GW-3	GW-4 (F)	GW-4	GW-5 (F)	GW-5
ALUMINUM	NC	25.5 J	1,000 J	732 J	20.4 J	977 J	28.3 J	1,080 J	15.1 UJ	1,530 J	19.7 J	4,810 J
ANTIMONY	6	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ARSENIC	50	6.5	7.6	7.5	**131**	**142**	**100**	**114**	4.2 U	16.5	4.2 U	4.2 U
BARIUM	200	120	134	134	921	907	887	943	95.9	122	79.6	112
BERYLLIUM	4	0.10	0.20 J	0.25 J	0.10 UJ	0.10 U	0.21 J	0.10 U	0.10 UJ	0.28 J	0.11 J	0.22 J
CADMIUM	5	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
CALCIUM	NC	135,000	146,000	147,000	161,000	159,000	139,000	15,1000	113,000	150,000	192,000	210,000
CHROMIUM	100	0.65	5.8	4.6	1.1	7.0	0.86	14.2	0.81	11.6	0.50 U	12.3
COBALT	NC	3.9	4.9	4.6	2.9	5.7	6.2	7.4	1.1	3.5	0.70 U	3.2
COPPER	1,300	0.70 U	4.4 J	2.8 J	0.70 U	15.0	0.70 U	10.6	0.70 U	11.8	1.7 J	11.6
IRON	NC	7,280	10,800 J	10,100 J	27,200	33,600 J	15,500	25,800 J	330	19,500 J	14.2 U	8,090 J
LEAD	15	1.7 U	1.7 U	1.7 U	1.7 U	**25.5**	1.7 U	6.0	1.7 U	6.9	1.7 U	2.6
MAGNESIUM	NC	47,300	51,200	51,600	75,200	73,700	57,400	62,100	61,000	70,600	142,000	150,000
MANGANESE	NC	608	700	694	170	269	865	975	1,130	1,580	17.0	128
MERCURY	2	0.10 U	0.10 U	0.10 U	0.10 J	0.10 U	0.14 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	NC	7.3	10.8	10.2	12.3	21.8	9.7	17.2	6.8	13.8	2.3	12.3
POTASSIUM	NC	1,550 J	1,960 J	1,920 J	4,780 J	5,150 J	6,910 J	7,490 J	1,810 J	2,540 J	465 J	1,880 J
SELENIUM	50	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
SILVER	NC	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SODIUM	NC	40,700	43,300	44,300	71,100	70,900	71,100	74,700	50,700	52,000	69,900	72,900
THALLIUM	2	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U
VANADIUM	NC	0.70 U	2.2	1.7	1.5	5.8	0.99	5.7	0.70 U	6.0	0.70 U	7.7
ZINC	NC	1.1 U	7.2 J	4.1 J	1.1 U	61.5	1.1 U	25.2	1.1 U	32.5	8.6 J	20.8 J
CYANIDE	200	1.6 U	1.6 J	1.3 J	4.6 J	0.60 UJ	3.6 J	3.5 J	1.0 J	1.4 J	2.2 J	1.2 J

TABLE 1 (Continued)

GROUNDWATER SAMPLE ANALYTICAL RESULTS

Notes:

All results are presented in micrograms per liter.

All MCL exceedances are presented in bold print.

D	=	Duplicate
F	=	Filtered sample
J	=	Estimated result
MCL	=	Maximum contaminant level
NC	=	No criterion established
U	=	Result below detection limit

TABLE 2

GROUNDWATER MONITORING WELL SAMPLE ANALYTICAL RESULTS

		SAMPLING LOCATION				
ANALYTE	MCL	MW-101 (F)	MW-101	MW-102 (F)	MW-102	MW-102 (D)
ALUMINUM	NC	15.1 U	145 J	15.1 U	944 J	646 J
ANTIMONY	6	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ARSENIC	50	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
BARIUM	200	142	239	41.0	45.8	46.7
BERYLLIUM	4	0.10 U	0.26 J	0.10 U	0.27 J	0.10 U
CADMIUM	5	0.60 U	1.7	0.60 U	0.60 U	0.60 U
CALCIUM	NC	149,000	151,000	103,000	102,000	105,000
CHROMIUM	100	0.70	1.6	0.50 U	2.1	1.0
COBALT	NC	0.70 U	0.70 U	0.70 U	0.70 U	0.70 J
COPPER	1,300	0.91 J	4.8 J	0.90 J	1.7 J	2.1 J
IRON	NC	5,860	12,900 J	14.2 U	1,490 J	1,100 J
LEAD	15	1.7 U	3.3	1.7 U	1.7 U	1.7 U
MAGNESIUM	NC	73,100	73,200	40,800	40,800	41,800
MANGANESE	NC	166	186	0.10 U	19.1	14.0
MERCURY	2	0.10 U	0.11	0.11 J	0.10 U	0.10 U
NICKEL	NC	1.3 U	1.6	1.9	3.3	2.7
POTASSIUM	NC	23,800 J	25,500 J	594 J	847 J	885 J
SELENIUM	50	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
SILVER	NC	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SODIUM	NC	22,600	22,600	34,900	35,300	36,700
THALLIUM	2	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U
VANADIUM	NC	0.70 U	1.0	0.70 U	1.5	0.90
ZINC	NC	1.1 U	1.9 J	1.1 U	2.6 J	2.2 J
CYANIDE	200	0.60 UJ	0.60 UJ	0.73 J	0.60 UJ	0.96 J

TABLE 2 (Continued)

GROUNDWATER MONITORING WELL SAMPLE ANALYTICAL RESULTS

Notes:

All results are presented in micrograms per liter.

All MCL exceedances are presented in bold print.

D	=	Duplicate
F	=	Filtered sample
J	=	Estimated result
MCL	=	Maximum contaminant level
NC	=	No criterion established
U	=	Result below detection limit

TABLE 3

SURFACE WATER SAMPLE ANALYTICAL RESULTS

		SAMPLING LOCATION								
ANALYTE	**AWQC**	**SW-1**	**SW-2**	**SW-3**	**SW-4**	**SW-5**	**SW-6**	**SW-6 D**	**SW-7**	**SW-8**
ALUMINUM	NC	3,710 J	4,930 J	262 J	5,230 J	396 J	504 J	518 J	642 J	1,500 J
ANTIMONY	30	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
ARSENIC	150	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U	4.2 U
BARIUM	NC	69.4	65.0	43.6	67.8	46.5	41.7	40.2	42.0	44.4
BERYLLIUM	5.3	0.46 J	0.18 J	0.10 U	0.53 J	0.10 U	0.20 J	0.10 U	0.10 U	0.26 J
CADMIUM	2.2	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U	0.60 U
CALCIUM	NC	60,800	35,800	82,500	40,100	86,600	79,500	77,300	78,400	55,900
CHROMIUM	NC	5.4	6.8	1.0	6.8	1.2	1.1	1.1	1.3	2.6
COBALT	NC	2.4	3.2	0.70 U	3.2	0.70 U	0.70 U	0.70 U	0.75	0.70 U
COPPER	9	9.0	**11.2**	1.9 J	**10.8**	2.4 J	1.6 J	2.2 J	2.7 J	4.3 J
IRON	1,000	**6,670 J**	**8,380 J**	553 J	**8,470 J**	827 J	774 J	801 J	994 J	**2,340 J**
LEAD	2.5	**5.7**	**6.2**	1.7 U	**6.6**	1.7 U	1.7 U	1.7 U	1.7 U	**3.0**
MAGNESIUM	NC	21,300	15,800	31,100	17,700	34,000	33,800	33,000	34,300	21,500
MANGANESE	NC	324	228	50.0	239	58.4	31.3	29.1	32.9	103
MERCURY	0.77	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
NICKEL	52	8.6	10.6	2.2	10.4	2.7	2.4	2.2	1.9	3.6
POTASSIUM	NC	4,720 J	5,120 J	2,540 J	4,730 J	2,170 J	1,820 J	1,730 J	1,760 J	3,250 J
SELENIUM	5	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U	4.8 U
SILVER	0.12	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
SODIUM	NC	12,900	6,740	20,300	7,590	17,900	15,900	15,600	15,500	14,400
THALLIUM	40	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U	6.2 U
VANADIUM	NC	7.9	10.7	0.84	11.1	0.78	0.97	1.2	2.0	2.9
ZINC	120	27.8	29.5	2.8 J	30.6	1.4 J	1.1 UJ	1.1 UJ	4.1 J	11.8 J
CYANIDE	5.2	0.72 J	1.3 J	1.1 J	1.3 J	1.4 J	1.1 J	1.0 J	0.60 U	1.7 J

TABLE 3 (Continued)

SURFACE WATER SAMPLE ANALYTICAL RESULTS (µg/L)

Notes:

All results are presented in micrograms per liter.

All AWQC exceedances are presented in bold print.

AWQC	=	Ambient water quality criteria
D	=	Duplicate
J	=	Estimated result
NC	=	No criteria established
SW	=	Surface water
U	=	Result below detection limits

TABLE 4

SEDIMENT SAMPLE ANALYTICAL RESULTS FOR METALS

			SAMPLING LOCATIONS								
Metal	LEL	SEL	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6	SED-7	SED-8	SED-9
ARSENIC	6	33	8.4	5.8	5.1	4.4	4	4.7	6.1	4.3	5.6
CADMIUM	0.6	10	0.2	0.21 U	0.83	0.18	0.14 U	0.18	0.31	0.17 U	1.7
COPPER	16	110	24.6	25.6	17	13.5	18.4	24.5	38.3	15.6	10.6
IRON	20,000	40,000	21,800	21,000	15,100	15,400	13,500	14,800	20,400	19,600	15,100
LEAD	31	250	32	44.4	33.1	23	37.3	55.3	40.1	15.6	15.6
MANGANESE	460	1,100	778	595	552	253	378	474	393	904	660
MERCURY	0.2	2	0.13 J	0.17 J	0.19 J	0.13 J	0.66 J	2.0 J	0.61 J	0.12 J	0.09 J
NICKEL	16	75	19.8	20.9	13.3	13.6	11.8	14.2	18.9	16.3	10.6
ZINC	120	820	86.6	99.4	127	60.7	61.8	80.7	102	60.5	44.9

Notes:

All shaded values meet or exceed their respective SEL or LEL

All values are presented in part per million

J = Estimated Result

LEL = Lowest effect level

SEL = Severe effect level

U = Result below detection limits

TABLE 5

SEDIMENT SAMPLE ANALYTICAL RESULTS FOR DIOXINS AND FURANS

	OCDD RESULT (ppb x 0.001 TEF)	OCDF RESULT (ppb x 0.001 TEF)	EPA-PROPOSED CRITERION (ppb)
SAMPLING LOCATION			
SED-1	0.0001	0.000005	1.0
SED-2	0.0017	0.000021	1.0
SED-3	0.00005	ND	1.0
SED-4	0.00025	0.000015	1.0
SED-5	0.000048	ND	1.0
SED-6	0.000135	0.000013	1.0
SED-6 (Duplicate)	0.000204	ND	1.0
SED-7	0.000174	0.000009	1.0
SED-8	0.000037	ND	1.0
SED-9	0.00921	0.000124	1.0

TABLE 5 (Continued)

SEDIMENT SAMPLE ANALYTICAL RESULTS FOR DIOXINS AND FURANS

Notes:

ND	=	Not detected
OCDD	=	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin
OCDF	=	1,2,3,4,6,7,8,9-octachlorodibenzofuran
ppb	=	Parts per billion
TEF	=	Toxicity Equivalency Factor
U.S. EPA	=	United States Environmental Protection Agency

TABLE 6

WASTE SAMPLE ANALYTICAL RESULTS FOR METALS AND DIOXINS/FURANS

ANALYTE	PRG[a] (mg/kg)	SAMPLE WST-1 RESULT
ALUMINUM	NC	9,650
ANTIMONY	680	4.3 J
ARSENIC	2.4	1.9 U
BARIUM	100,000	112
BERYLLIUM	1.1	0.32 J
CADMIUM	850	1.7
CALCIUM	NC	7,850
CHROMIUM	450	49.0
COBALT	97,000	5.5
COPPER	63,000	205
IRON	NC	7,450
LEAD	400	209
MAGNESIUM	NC	2,110
MANGANESE	NC	195
MERCURY	510	0.63 J
NICKEL	34,000	17.6
POTASSIUM	NC	613 J
SELENIUM	8,500	2.1 U
SILVER	8,500	2.5
SODIUM	NC	302 J
THALLIUM	120	2.8 U
VANADIUM	12,000	17.9
ZINC	100,000	1,090
CYANIDE	14,000	9.4
OCDD	1[b]	ND
OCDF	1[b]	ND

TABLE 6 (Continued)

WASTE SAMPLE ANALYTICAL RESULTS FOR METALS AND DIOXINS AND FURANS

Notes:

J	=	Estimated result
mg/kg	=	Milligrams per kilogram
NC	=	No established criteria
ND	=	Not detected
OCDD	=	1,2,3,4,6,7,8,9-octachlorodibenzo-p-dioxin
OCDF	=	1,2,3,4,6,7,8,9-octachlorodibenzofuran
PRG	=	U.S. EPA Region 9 preliminary remediation goal for soils on commercial or industrial property
U	=	Result below detection limits

[a] Criteria for OCDD and OCDF are from U.S. EPA 1998

[b] Criteria for dioxins and furans are presented in parts per billion

TABLE 7

EQUIPMENT RINSATE BLANK ANALYTICAL RESULTS FOR METALS

	SAMPLE NUMBER	
ANALYTE	EB-1	EB-2
ALUMINUM	14,200 J	15.3 J
ANTIMONY	2.5 U	2.5 U
ARSENIC	8.7	4.2 U
BARIUM	196	1.3
BERYLLIUM	1.1 J	0.10 U
CADMIUM	0.60 U	0.60 U
CALCIUM	84,000	17.6 UJ
CHROMIUM	233	0.50 U
COBALT	16.7	0.70 U
COPPER	35.5	2.7 J
IRON	64,200 J	14.2 U
LEAD	38.6	1.7 U
MAGNESIUM	31,300	21.4 U
MANGANESE	1,830	0.64 J
MERCURY	0.15	0.10 J
NICKEL	43.5	1.3 U
POTASSIUM	2,720	41.6 U
SELENIUM	4.8 U	4.8 U
SILVER	0.50 U	0.50 U
SODIUM	12,600	152 J
THALLIUM	7.4	6.2 UJ
VANADIUM	30.6	0.70 U
ZINC	148	1.1 UJ
CYANIDE	NA	NA

TABLE 7

EQUIPMENT RINSATE BLANK ANALYTICAL RESULTS FOR METALS

Notes:

All values are presented in parts per billion

J	=	Estimated result
NA	=	Not analyzed
U	=	Result below detection limits

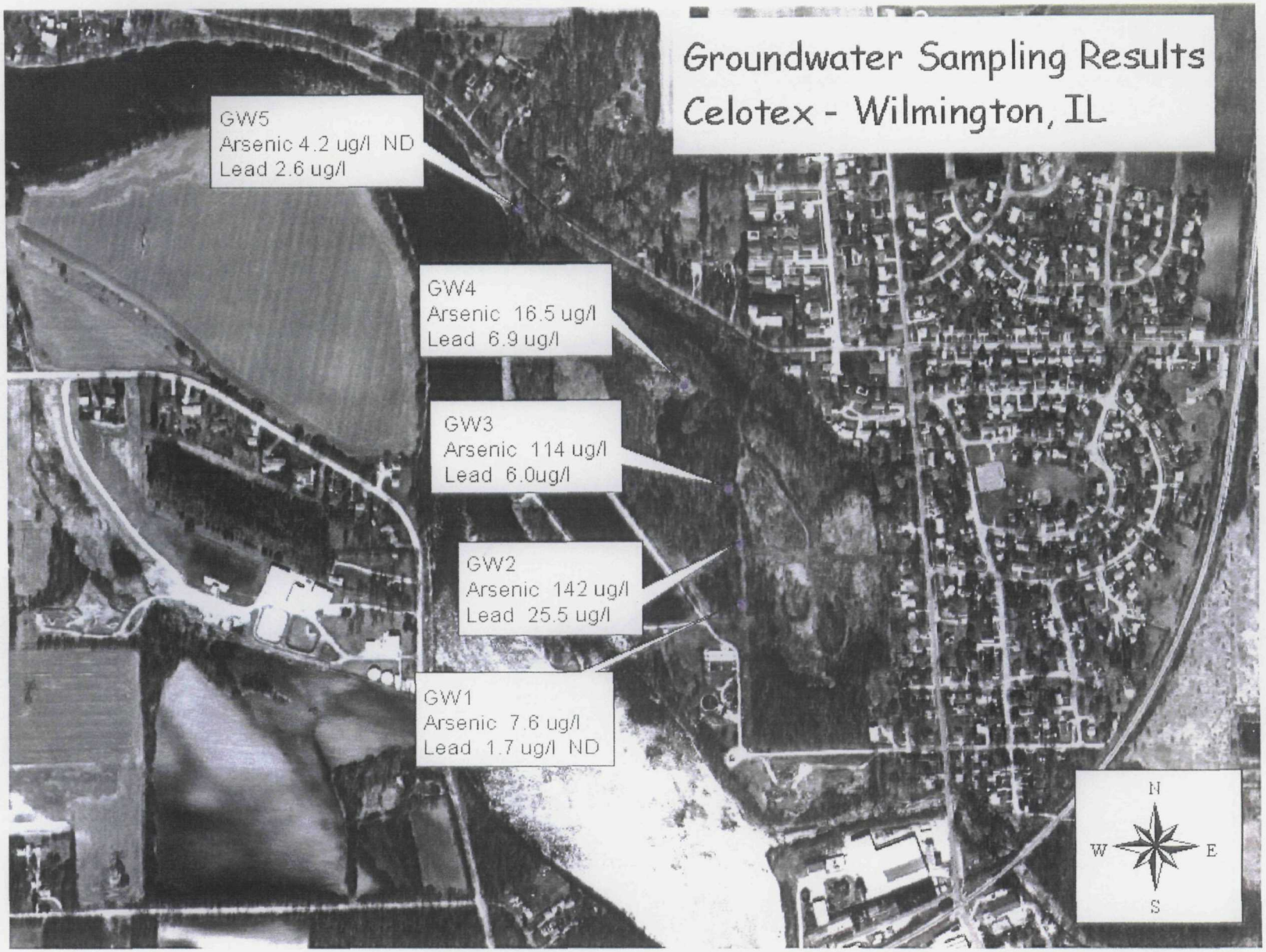
4.1 GROUNDWATER SAMPLE ANALYTICAL RESULTS FOR METALS AND CYANIDE

Groundwater samples were collected from five temporary monitoring points throughout the site property. Both filtered and unfiltered samples were collected and analyzed for metals and cyanide. Analytical results for these samples were compared to U.S. EPA maximum contaminant levels (MCL) for drinking water. Concentrations of two metals, arsenic and lead, exceeded the MCLs for drinking water (see Table 1). Arsenic concentrations exceeded the MCL of 50 ppb at two groundwater sampling locations, GW-2 and GW-3. The filtered and unfiltered groundwater samples from GW-2 contained arsenic concentrations of 131 and 142 ppb respectively. In addition, both filtered and unfiltered groundwater samples from GW-3 contained arsenic concentrations of 100 and 114 ppb, respectively. Arsenic concentrations at all other temporary groundwater monitoring points were well below the MCL. The lead MCL of 15 ppb was exceeded in the unfiltered groundwater sample from GW-2, which had a lead concentration of 25.5 ppb. Analytical results for lead in filtered groundwater samples were non-detect. No lead MCL exceedences were detected at any of the other temporary groundwater monitoring points. Groundwater results exceeding established criteria are presented in Figure 3 of this report.

Groundwater samples were also collected from two pre-existing monitoring wells at the Celotex site. Filtered and unfiltered samples were collected and analyzed for metals and cyanide. Analytical results for these samples were compared to U.S. EPA MCLs for drinking water (see Table 2). The analyte barium exceeded the MCL of 200 ppb in the unfiltered sample from MW-101. No other analyte concentrations exceeded any established MCL.

4.2 SURFACE WATER SAMPLE ANALYTICAL RESULTS FOR METALS AND CYANIDE

Surface water samples were collected at eight locations at the Celotex site. Two locations were in Forked Creek adjacent to the site property, five locations were in the Kankakee River, and one location was in a slough on the site property. All surface water samples were analyzed for metals and cyanide. Surface water sample analytical results were then compared to U.S. EPA Ambient



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

FIGURE 3
GROUNDWATER SAMPLING RESULTS

SOURCE: MODIFIED FROM FIGURE GENERATED U.S. EPA 2001

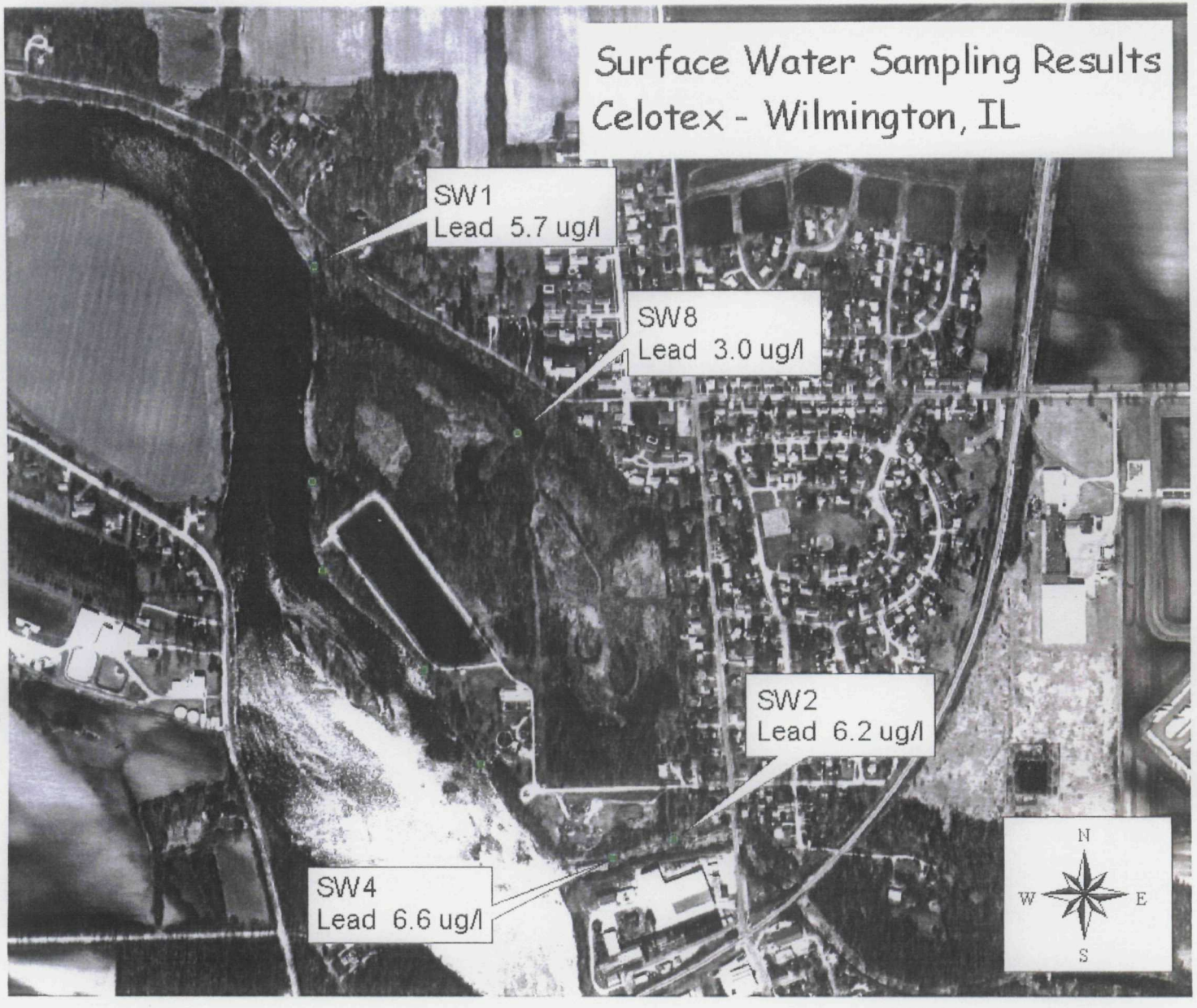
Tetra Tech EM Inc.

Water Quality Criteria (AWQC) for fresh surface water (see Table 3). Concentrations of three metals, copper, iron, and lead, exceeded AWQC. The copper AWQC of 9 ppb was exceeded in samples SW-2 and SW-4 at concentrations of 11.2 and 10.8 ppb respectively. The iron AWQC of 1,000 ppb was exceeded in samples SW-1, SW-2, SW-4, and SW-8 at concentrations of 6,670; 8,380; 8,420; and 2,340 ppb, respectively. The lead AWQC of 2.5 ppb was exceeded in samples SW-1, SW-2, SW-4, and SW-8 at concentrations of 5.7, 6.2, 6.6, and 3.0 ppb respectively. Surface water samples with lead concentrations exceeding AWQC are presented in Table 4 of this report.

4.3 SEDIMENT SAMPLE ANALYTICAL RESULTS FOR METALS AND CYANIDE

Nine sediment samples were collected at the Celotex site and analyzed for metals and cyanide analyses. Two samples were collected from Forked Creek, five samples were collected from the Kankakee River, one sample was collected from a slough on the site property, and one sample was collected from the flood plain area near MW-102. The sediment sample analytical results were compared to the Province of Ontario aquatic sediment guidelines' lowest effect level (LEL) and severe effect level (SEL) for each metal (Persaud et. al., 1993). An LEL represents low-level contamination that may have an effect on some aquatic organisms. An SEL represents high-level contamination that will have an effect on some aquatic organisms.

As shown in Table 4, of the nine sediment samples, eight samples had metal concentrations exceeding their LELs. Also, one sediment sample, SED-6, had an estimated mercury concentration of 2.0 ppm, which is the SEL. Sediment samples exceeding established criteria are presented in Figure 5 of this report.

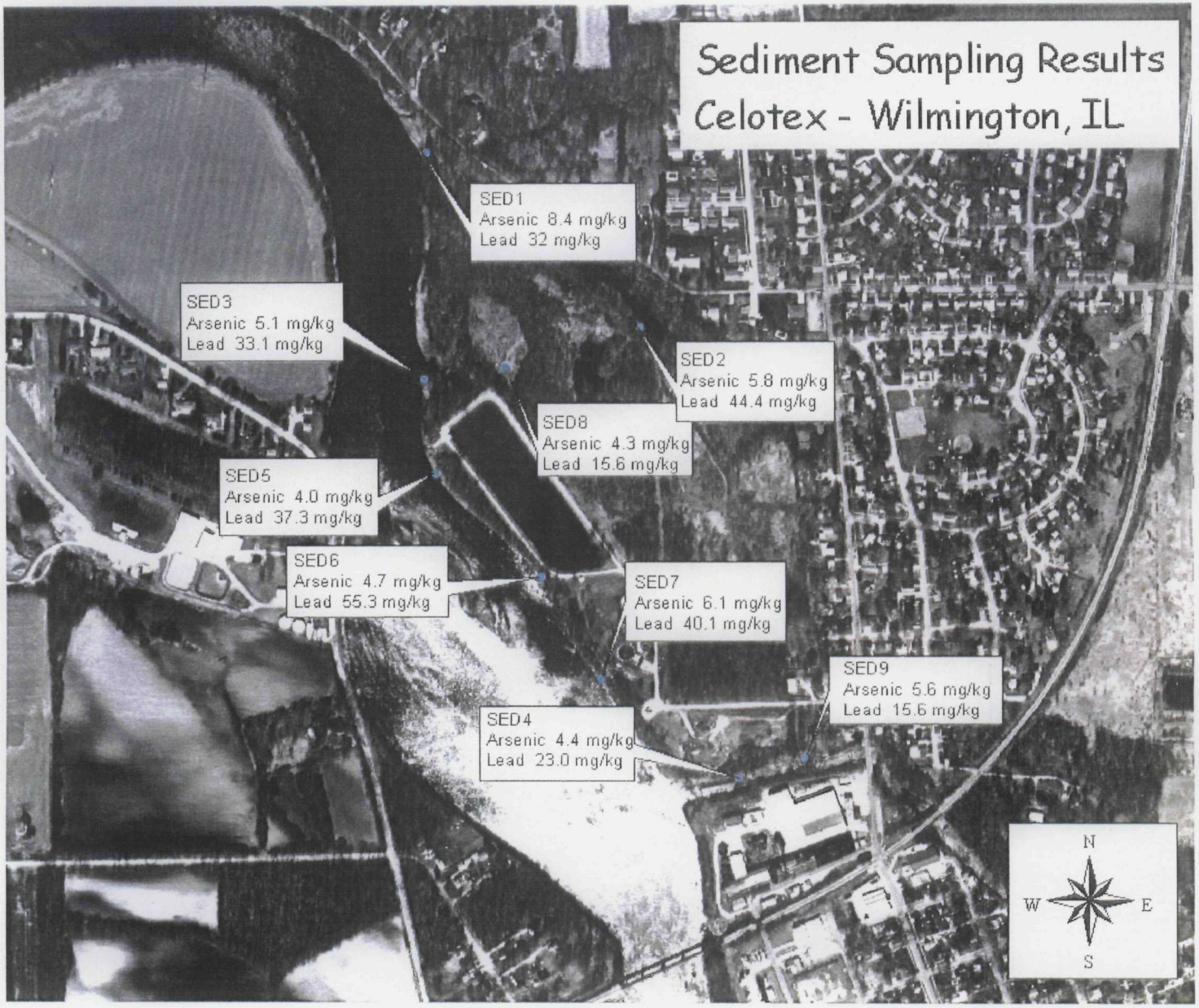


UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

FIGURE 4
SURFACE WATER SAMPLING RESULTS

SOURCE: MODIFIED FROM FIGURE GENERATED U.S. EPA 2001

Tetra Tech EM Inc.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

FIGURE 5
SEDIMENT SAMPLING RESULTS

SOURCE: MODIFIED FROM FIGURE GENERATED U.S. EPA 2001

Tetra Tech EM Inc.

4.4 SEDIMENT SAMPLE ANALYTICAL RESULTS FOR DIOXINS AND FURANS

Samples collected from all nine sediment sampling locations were analyzed for dioxins and furans. Table 5 lists the results of the dioxin and furan analyses and the EPA-proposed cleanup criteria for dioxins. In April 1998, the U.S. EPA issued a guidance document that addresses acceptable dioxin levels in soil. According to the U.S. EPA guidance document, each dioxin congener has been compared to the carcinogenic potential of the dioxin 2,3,7,8-tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD). The congener 2,3,7,8-TCDD is considered the most toxic congener, and has been assigned a value of 1. All other congeners are then compared against a toxicity equivalency factor (TEF), ranging from 0.001 to 0.5 (U.S. EPA 1999). The EPA has also proposed general dioxin cleanup levels of 1 ppb for residential properties and 5 to 20 ppb for commercial and industrial properties (U. S. EPA 1998). In accordance with the U.S. EPA guidance document, all OCDD and and OCDF results were multiplied by a TEF of 0.001. After using the TEF, no dioxin or furan results exceeded 1 ppb.

4.5 WASTE SAMPLE ANALYTICAL RESULTS FOR METALS, DIOXINS AND FURANS

The waste sample analytical results were compared to U.S. EPA Region 9 preliminary remediation goals (PRG) for soil on commercial and industrial property (see Table 6). The analytical results indicated that no metals concentrations exceeded their respective PRGs criteria. The waste sample analytical results for dioxins and furans in WST-1 were nondetect

4.6 EQUIPMENT BLANK ANALYTICAL RESULTS FOR METALS

One equipment rinsate blank, EB-1, was collected from rinsate from the Geoprobe push rod. As shown in Table 7, analytical results for EB-1 indicated high concentrations of metals, particularly aluminum and lead. This sample, however, was collected at the final sampling location (GW-4), and the push rod had not been rinsed with distilled water after decontamination as it had at the previous four locations. Because sampling location GW-4 was the final sampling location on 7 Feb 01, and because the Geoprobe was not used for sampling activities on subsequent days, the

contamination had no effect on any of the groundwater sampling results. Analytical results for EB-2, which was collected from rinsate from the hand auger used to collect sediment samples, indicated low concentrations of aluminum, barium, copper, manganese, mercury, and sodium. The results for all other metals were nondetect.

5.0 SUMMARY

During the sampling event at the Celotex site in Wilmington, Illinois, groundwater, surface water, sediment, and waste samples were collected and analyzed for chemicals of concern. Groundwater and surface water samples were analyzed for metals and cyanide; sediment samples and one waste sample were analyzed for metals, cyanide, and dioxins and furans contamination. The medium specific results of the sampling event are summarized below

GROUNDWATER

Groundwater samples were collected at a total of seven locations. Two samples, one filtered and one unfiltered, were collected at each location. Analytical results indicated that at two locations, GW-2 and GW-3, metal concentrations exceeded U.S. EPA MCLs for two metals, arsenic and lead. At GW-2 and GW-3 arsenic concentrations exceeded 100 ppb in both the filtered and unfiltered samples, indicating the possibility of significant arsenic contamination at these locations. At GW-2, the lead concentration exceeded the MCL in the unfiltered sample (25.5 ppb), but lead was not detected in the filtered sample. No other metal concentration in groundwater exceeded MCLs.

In the SSI conducted by IEPA in 1994, groundwater samples collected from monitoring well G-103 indicated the presence of arsenic at 51 ppb. For the purposes of this site investigation, G-103 was designated MW-103. MW-103 was not sampled during the Feb 01 sampling event because the well was blocked by debris. MW-103 lies is north of groundwater sampling locations GW-2 and GW-3. All of these groundwater sampling locations are just west of the landfill, and lie between the Kankakee River and the landfill. The presence of elevated arsenic concentrations in groundwater at these locations could indicate that arsenic is migrating from the landfill, towards the Kankakee River. Arsenic was not detected in any surface water samples collected at the east bank of the Kankakee River.

SURFACE WATER

Surface water samples were collected at eight locations that were co-located with sediment sampling locations. The surface water samples were analyzed for metals and cyanide and compare to AWQC. The metals copper, iron, and lead all had incidents of exceeding the AWQC. Copper exceeded the AWQC of 9 ppb in samples SW-2 and SW-4 at concentrations of 11.2 and 10.8 ppb, respectively. Iron exceeded the AWQC of 1,000 ppb in samples SW-1, SW-2, SW-4 and SW-8 at estimated concentrations of 6,670; 8,380; 8,470; and 2,340 ppb, receptively. Lead exceeded the AWQC of 2.5 ppb in samples SW-1, SW-2, SW-4 and SW-8 at concentrations of 5.7, 6.2, 6.6, and 3.0 ppb, respectively.

SEDIMENT

Sediment samples were collected at nine locations and were analyzed for metals, cyanide, and dioxins and furans. Eight of the sediment samples had metal concentrations that exceeded LELs; most of these concentrations, however, only slightly exceeded the LELs. One sediment sampling location, SED-6 had an estimated mercury concentration of 2.0 ppm, which is the SEL. Dioxin and furan analytical results were multiplied by a TEF of .001. After using the TEF, all dioxin and furan results were below 1 ppb.

ON-SITE WASTE

One waste sample was collected from a surface depression on the site for metals and dioxin analyses. Waste sample analytical results were compared to U.S. EPA Region 9 PRGs for metals. No metal concentrations in the sample exceeded the PRGs. The dioxin and furan results for the waste sample were nondetects.

6.0 REFERENCES

Illinois Environmental Protection Agency (IEPA). 1988. "Preliminary Assessment Report." Celotex Corporation Dump Site, Wilmington, Illinois. August 9.

IEPA. 1989. "Screening Site Inspection Report." Celotex Corporation Dump Site, Wilmington, Illinois. November.

IEPA. 1995. "Site Inspection Prioritization Report." Celotex Corporation Dump Site, Wilmington, Illinois. September.

IEPA. 1997. "Site Team Evaluation Prioritization Report." Celotex Corporation Dump Site, Wilmington, Illinois. May.

Persaud, D., R. Jaagumagi, and R. Hayton. 1993. "Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario." Water Resources Branch, Ontario Ministry of the Environment. August.

U.S. Environmental Protection Agency (U.S. EPA). 1999. "Memorandum addressing Dioxin/Furan concentration data for soil sample NLS#209812." October.

U.S. Environmental Protection Agency (U.S. EPA). 1998. "Memorandum for the Approach for Addressing Dioxin in Soil at CERCLA and RCRA Sites." April.

U.S. EPA. 2001. "Figure 2. Celotex Corp. Dumpsite. ILD 981 961 634. 1988 Air Photo."

U.S. EPA. 2001. "Figure 3. Celotex Corp. Dumpsite. ILD 981 961 634. 1988 Air Photo."

U.S. EPA. 2001. "Figure 4. Celotex Corp. Dumpsite. ILD 981 961 634. 1988 Air Photo."

U.S. EPA. 2001. "Figure 5. Celotex Corp. Dumpsite. ILD 981 961 634. 1988 Air Photo."

U.S. Geological Survey (USGS). 1993. 7.5 Minute Series Topographic Map of the Wilmington and Symerton, Illinois, Quadrangles. Photorevised.

APPENDIX A

FIELD SAMPLING ACTIVITIES

(seven pages)

FIELD SAMPLING ACTIVITIES

Wednesday, 7 Feb 01

At 0700, START; IEPA; Celotex's lawyer, Neil Weinfield; and Celotex's consultant, AC&E Laboratories (AC&E), arrived on site. At approximately 0740, the Geoprobe contractor, Terra Trace, arrived on site. All the parties discussed the plan for the day and agreed to begin groundwater sampling at the northernmost location, GW-5. At 0830, all the parties arrived at sampling location GW-5. It was discovered that the Kankakee River had risen and frozen over GW-5. Terra Trace expressed concern over the hazards of driving the Geoprobe over the ice. After some discussion, all the parties agreed to relocate GW-5 approximately 75 feet northwest of the original location. At 0845, Terra Trace advanced boring GW-5. Geoprobe refusal occurred 9 feet below ground surface (bgs). Terra Trace began pumping groundwater from GW-5 using a peristaltic pump. After Terra Trace purged GW-5 until the groundwater became visually clear became visibly clear, START and AC&E each collected one unfiltered sample and one filtered sample for metals and cyanide analyses. AC&E measured the depth to groundwater and determined that groundwater at GW-5 was 7.9 feet bgs. After sample collection, Terra Trace decontaminated all the sampling equipment and filled GW-5 with grout.

At 0945, all the parties arrived at sampling location GW-1. START was notified by an employee of the Wilmington wastewater treatment plant that a sewer line ran near sampling locations GW-1, GW-2, and GW-3. All the parties agreed to relocate the sampling locations approximately 20 feet west of the original locations. Terra Trace than began advancing boring GW-1 (see Photograph No. 1 in Appendix B). Refusal occurred 10 feet bgs. After Terra Trace purged GW-1 (see Photograph No. 2), START collected one unfiltered sample and one filtered sample for metal and cyanide analyses (See Photograph No. 3). START also collected one duplicate of the unfiltered sample for metals analysis. AC&E collected split samples of all samples collected by START (see Photograph No. 4). After sample collection was completed, AC&E measured the depth to groundwater at GW-1 as 3 feet, 3 inches bgs. Terra Trace then decontaminated all the sampling equipment (see Photograph No. 5) and filled GW-1 with grout.

At 1055, Terra Trace began advancing boring GW-2. Geoprobe refusal occurred 13.5 feet bgs. Terra Trace then notified START that the retractable screen was jammed and the sampling point

would have to be re-inserted. After removing the push rod from GW-2 and decontaminating it, Terra Trace re-inserted the push rod. At 1123, Terra Trace began to purge GW-2. After Terra Trace purged GW-2, START collected an unfiltered sample and a filtered sample for metal and cyanide analyses; AC&E collected split samples (see Photograph No. 6). The depth to groundwater at GW-2 was 6.85 feet bgs. After sample collection was completed, all the sampling equipment was decontaminated, and GW-2 was filled with grout.

At 1245, Mark Wagner of IEPA collected waste sample WST-1 for metal, cyanide, and dioxin analysis. The sample was collected from a sinkhole in the central portion of the landfill by first using a pickax to break up the organic material and surface soil and then digging down approximately 6 inches to gray waste material with a dedicated steel trowel (see Photograph No. 7). The waste material was then placed in a dedicated steel bowl for homogenization. START collected samples of the material for metal, cyanide, and dioxin analyses, and AC&E collected split samples. After sample collection, all the parties left the site for lunch at 1330.

At 1424, Terra Trace began advancing boring GW-3. Geoprobe refusal occurred 13 feet bgs. After Terra Trace purged GW-3, START collected an unfiltered sample and a filtered sample for metal and cyanide analyses. START also collected a matrix spike/matrix spike (MS/MSD) duplicate sample pair from GW-3. AC&E collected split samples. Terra Trace removed the push rod from GW-3 before measuring the depth to groundwater. After sample collection was completed, all the sampling equipment was decontaminated (see Photograph No. 8), and GW-3 was filled with grout.

At 1550, Terra Trace began advancing boring GW-4 (see Photograph No. 9). Geoprobe refusal occurred 10 feet bgs. Terra Trace began purging GW-4 (see Photograph No. 10). After GW-4 had been purged, START collected an unfiltered sample and a filtered sample for metal and cyanide analyses; AC&E collected split samples. After sample collection was completed, Terra Trace decontaminated all the sampling equipment and filled GW-4 with grout. START told Terra Trace that an equipment rinsate blank would need to be collected. When the equipment blank was collected, the sample appeared to be murky. Terra Trace stated that the equipment was not rinsed with distilled water because GW-4 was to be the last sampling location for the day. At 1700, START packed all of its samples in ice, and all the parties left the site for the day.

Thursday, 8 Feb. 2001

At 0730, START; AC&E; and Celotex's lawyer, Neil Weinfield, arrived on site. Activities for the day were to consist of surface water and sampling. Aat the first sampling location, SW-1 and SED-1, it was discovered that the location was covered with several inches of ice. START decided to use a pickax to break the ice and to return to the location later in the day to allow any disturbed soil particles to settle. All the parties relocated to location SW-3 and SED-3. At the location, it was again discovered that location was also covered with a thick layer of ice. Celotex's lawyer suggested that SW-3 and SED-3 be relocated upstream to a point that was accessible. START informed Mr. Weinfield that the normal sampling protocol was to begin sampling downstream and proceed upstream. After some discussion, AC&E and Celotex's lawyer agreed that SW-3 and SED-3 should be far enough upstream so as not to affect the integrity of samples SW-1 and SED-1.

At 0950, START began collecting samples SW-3 and SED-3. The sampling location was approximately 100 yards downstream from the outfall and 3 feet from the bank in approximately 2 feet of water. START first collected surface water samples for metal and cyanide analyses. Tetra Tech also filled sample bottles for AC&E's split samples. After collecting surface water samples, Tetra Tech began collecting sediment samples for metal, cyanide, and dioxin and furan analyses. Sample recovery was difficult, possibly because of the large amount of organic material plugging the core tip. The hand auger had to be deployed six times in order to collect sufficient sample volume. The sediment was characterized as black and brown silt with a large quantity of organic material. After sample collection was completed, sample tubes were removed from the hand auger (see Photograph No. 11), taped, labeled, and placed in a cooler for homogenization and splitting later in the day. The hand auger was then decontaminated with Alconox and rinsed with distilled water.

At 1115, Celotex's attorney, Mr. Weinfield, questioned whether sediment and surface water sampling could be finished during the day. START informed him that another day of sampling might be required to finish sample collection. Mr. Weinfield asked START whether more staff could be brought on site on 9 Feb 01 to make sure sampling was completed within the three day

period. After a telephone discussion among U.S. EPA RPM Jon Peterson, U.S. EPA lawyer Rick Murowski, and Celotex attorney Neil Weinfield, it was decided that it would be best to use two more personnel to finish sampling tomorrow. START arranged to have two people from its subcontractor, TN&Associates (TN&A), come to the site on 9 Feb 01 to assist in the sampling.

At 1230, all the parties relocated to sampling location SW-5 and SED-5. This location was approximately 30 yards upstream from the outfall. START began collecting surface water samples for metal and cyanide analyses (see Photograph No. 12). START also filled sample bottles for AC&E's split samples. After collecting surface water samples, START began collecting sediment samples for metal, cyanide, and dioxin analyses. The sediment samples were collected in approximately 2 feet of water. Sample recovery was better than at location SED-3. The sediment was characterized as silty clay with some sand. After enough sample volume had been collected, sample tubes removed from the hand auger, were taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then decontaminated the hand auger. At 1300, all the parties left the site for lunch.

At 1430, START began sampling at sample location SW-6 and SED-6. START first collected surface water samples for metal and cyanide analyses. START also filled sample bottles for AC&E's split samples. After collecting surface water samples, START began sediment sample collection for metal, cyanide, and dioxin analyses. The sediment was characterized as silty clay with some sand. After enough sample volume had been collected, sample tubes were taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then decontaminated the hand auger.

At 1615, START began collecting samples at location SW-7 and SED-7. START first collected surface water samples for metal and cyanide analyses. START also filled sample bottles for AC&E's split samples. After surface water samples were collected, START collected sediment samples for metal, cyanide, and dioxin analyses (see Photograph No. 13). The sediment was characterized as sandy clay. After sufficient sample volume was collected, the sample tubes were removed from the hand auger, taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then decontaminated the hand auger. START decided sampling should be concluded for the day. AC&E suggested that its laboratory be used for sediment sample

homogenization and splitting. START agreed, and all the parties left the site at 1730.

At 1800, START and AC&E arrived at AC&E's laboratory. All the sediment sample tubes were laid out on a table for homogenization. START spread aluminum foil on the table before extracting the sediment from the sample tube. Once the sediment was extracted from a tubes, the sample was placed in a stainless-steel bowl and manually homogenized using latex gloves. After each sample was homogenized, the sample was quartered and split between START and AC&E. Samples were placed in 4-ounce, glass sample jars with Teflon-lined lids. After all the sediment samples were homogenized and split, START left AC&E's laboratory at 2000.

Friday, 9 Feb 01

At 0730, START, TN&A, and AC&E arrived on site. Upon their arrival, they observed that the Kankakee River and Forked Creek water levels had risen approximately 1.5 to 2 feet overnight. All the parties discussed the sampling activities for the day and decided that one TN&A staff member would accompany AC&E to collect groundwater monitoring well samples, and a second TN&A staff member would accompany START collect the last surface water and sediment samples, and two AC&E employees would also accompany START to collect split samples.

At 0840, TN&A began sample collection at monitoring well (MW)-101 (see Photograph No. 14). One filtered sample and one unfiltered sample were collected from MW-101 metal and cyanide analyses. TN&A also collected an MS/MSD at this location, and AC&E collected split samples. At 0845, START began collecting surface water and sediment samples at location SW-4 and SED-4. START first collected surface water samples for metal and cyanide analyses. START also filled two 1-liter bottles for AC&E's split samples. After collecting the surface water samples, START collected sediment samples for metal, cyanide, and dioxin analyses. The sediment was characterized as sandy clay. Sample recovery was difficult because of the large amount of organic material in the sediment. After sufficient sample volume was collected, sample tubes were removed from the hand auger, taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then deco..minated all the sampling equipment.

At 1045, TN&A and AC&E arrived at MW-103. Upon their arrival, they observed that MW-103 had been broken open (see Photograph No. 15) and that debris, such as leaves and sticks, had been shoved into the well. TN&A and AC&E decided that sample collection would not be possible at MW-103 and left that location. At 1100, START began surface water and sediment sample collection at location SW-2 and SED-9. START first collected surface water samples for metal and cyanide analysis, as well as an MS/MSD. Tetra Tech also collected split samples for AC&E. After collecting surface water samples, START collected sediment samples (see Photograph No. 16) for metal, cyanide, and dioxin analyses. Sample recovery at this location was difficult because of the large amount of organic material in the sediment. The sediment was characterized as sandy clay with some silt. After enough sample volume had been collected, sample tubes were removed from the hand auger, taped, labeled, and placed in a cooler for homogenization and splitting later in the day. Tetra Tech then decontaminated all the sampling equipment and collected an equipment rinsate blank.

At 1230, all the parties met in the vicinity of location SW-1 and SED-1. Because the Kankakee River water level had risen at least 2 feet, accessing this location would have been difficult difficult. All the parties agreed to relocate the sampling location approximately 30 feet northeast of the original location. START first collected surface water samples for metal and cyanide analyses. START also collected AC&E's split samples. After collecting the surface water samples, Tetra Tech collected sediment samples for metal, cyanide, and dioxin analyses. The sediment was characterized as brown to black silt and sand. After enough sample volume was collected, all sample tubs were removed from the hand auger, taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then decontaminated all the sampling equipment. At 1330, all the parties left the site for lunch.

At 2:50 p.m., TN&A and AC&E began collecting groundwater samples from MW-102 for metal and cyanide analyses. One filtered sample and one unfiltered sample were collected, and AC&E collected split samples. At 1530, START began collecting surface water and sediment samples location SW-8 and SED-2, which was located in the slough on the east side of the landfill. START first collected surface water samples for metal and cyanide analyses; START also collected split samples for AC&E. After collecting surface water samples, START collected sediment samples for metal, cyanide, and dioxin analyses. Sample recovery was difficult because

of the large amount of organic material in the sediment. The sediment was characterized as humus and black silt. After enough sample volume was collected, sample tubes were removed from the hand auger, taped, labeled, and placed in a cooler for homogenization and splitting later in the day. START then decontaminated all the sampling equipment.

At 1620, START began sediment sampling at location SED-8, which was near MW-102, for metal, cyanide, and dioxin analyses. At this location, START ran out of sample tubes, so all recovered sediment was placed in a large, wide-mouth, plastic bottle. The sediment was characterized as stiff clay and silt. After enough sample volume had been collected, the sample bottle was labeled and placed in a cooler for homogenization and splitting later in the day. This sample was the final sample collected during the sampling event. At 1730, all the parties left the site to travel to AC&E's laboratory to split the sediment samples. At 1800, all parties arrived at AC&E's laboratory. The procedures used on 8 Feb 01, to homogenize and split samples were used also on 9 Feb 01. After splitting all the sediment samples, START left the laboratory at 2000.

APPENDIX B

PHOTOGRAPHIC LOG

(eight pages)

Photograph No. 1
Orientation: North
Description: Terra Trace Installing GW-1

Location: Celotex
Date: 7 Feb 01

Photograph No. 2
Orientation: North
Description: Terra Trace purging GW-1

Location: Celotex
Date: 7 Feb 01

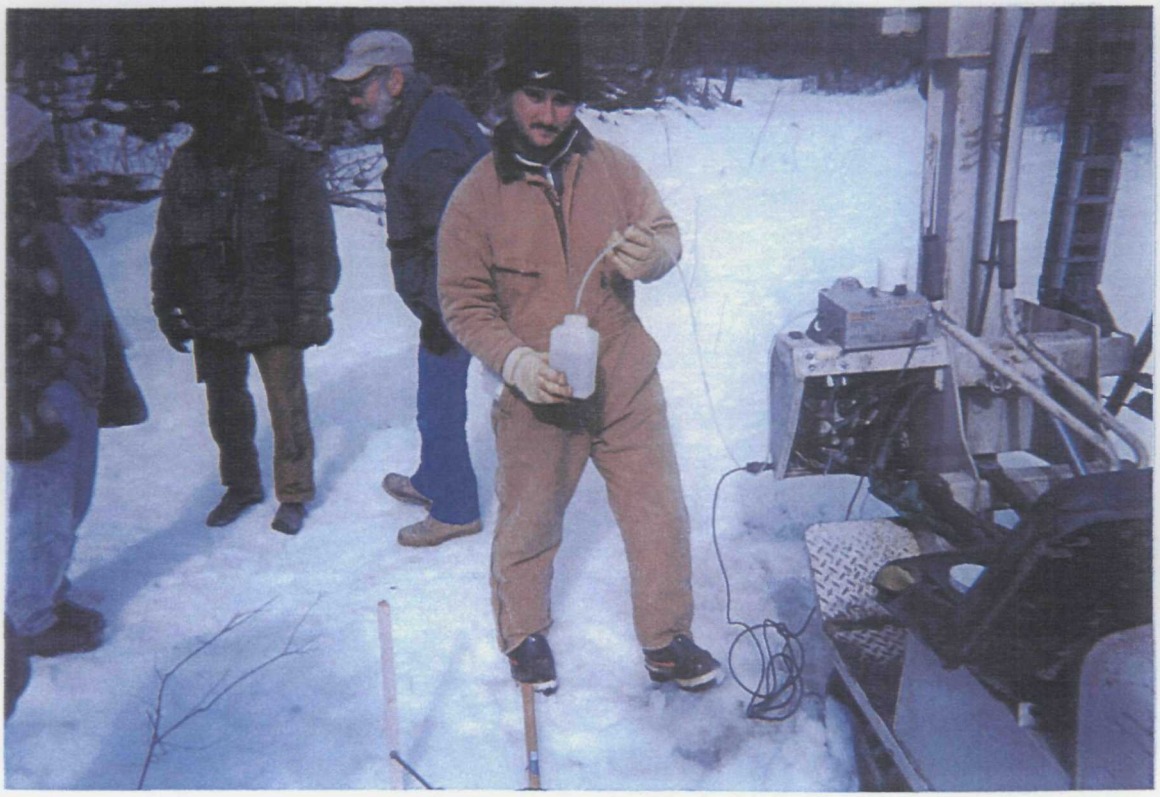
Photograph No. 3
Orientation: West
Description: Sample collection at GW-1

Location: Celotex
Date: 7 Feb 01

Photograph No. 4
Orientation: South
Description: AC&E collecting split sample from GW-1

Location: Celotex
Date: 7 Feb 01

Photograph No. 5
Orientation: South
Location: Celotex
Date: 7 Feb 01
Description: Terra Trace decontaminating geoprobe push rod after sample collection at GW-1



Photograph No. 6
Orientation: West
Location: Celotex
Date: 7 Feb 01
Description: AC&E collecting split sample from GW-2

Photograph No. 7
Orientation: Norhwest
Description: Mr. Mark Wagner of IEPA collecting waste sample WST-1

Location: Celotex
Date: 7 Feb 01

Photograph No. 8
Orientation: North
Description: Terra Trace decontaminating sample equipment after sample collection at GW-3

Location: Celotex
Date: 7 Feb 01

Photograph No. 9
Orientation: West
Description: Terra Trace installing GW-4

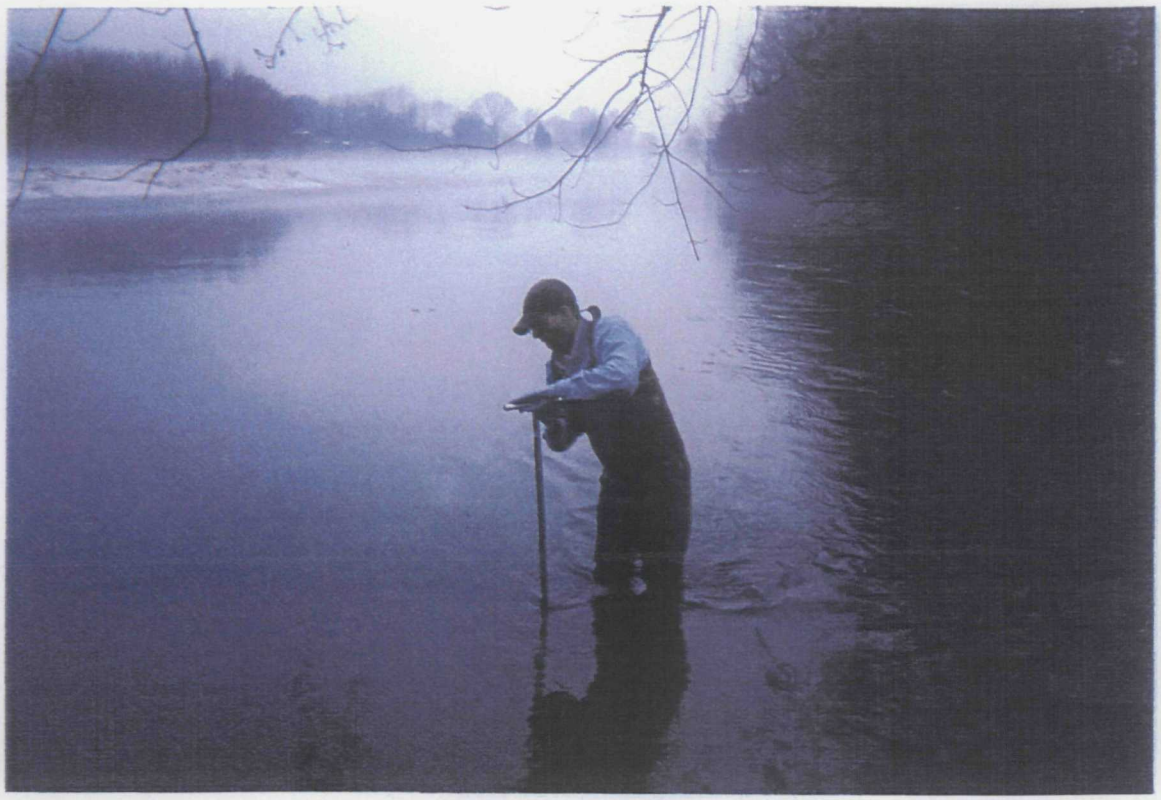
Location: Celotex
Date: 7 Feb 01

Photograph No. 10
Orientation: Southwest
Description: Terra Trace purging GW-4

Location: Celotex
Date: 7 Feb 01

Photograph No. 11 Location: Celotex
Orientation: Norhteast Date: 8 Feb 01
Description: START removing sample tube from auger at sediment sample location SED-3

Photograph No. 12 Location: Celotex
Orientation: Southwest Date: 8 Feb 01
Description: START collecting surface water sample at SW-5



Photograph No. 13
Orientation: North
Description: START collecting sediment sample at SED-7

Location: Celotex
Date: 8 Feb 01

Photograph No. 14
Orientation: West
Description: Monitoring well MW-101

Location: Celotex
Date: 9 Feb 01

Photograph No. 15
Orientation: North
Description: Monitoring well MW-103 broken open

Location: Celotex
Date: 9 Feb 01

Photograph No. 16
Orientation: Southwest
Description: START collecting sediment sample from location SED-9

Location: Celotex
Date: 9 Feb 01

APPENDIX C

FIELD LOOGBOOK NOTES

(5 sheets)

Clean 2/1/01

0700 - Start, IEPA, Celotex, Celotex lawyer, Celotex Consultant (ACE) onsite. All parties discussed plan for day. Terra Trace has not yet arrived. Work will begin upon Terra Trace's arrival.

0830 - All parties arrived at GW-5 ft was discovered that river had risen and frozen since visit. All parties agreed to move sample appox 75 ft. NW of previous point

0845 - GW-5 installed. GW at approx 9 ft.

0852 - Parties collect GW sample
1 filtered metals/GW
1 unfiltered Metal/GW
GW was measured at 7.9 ft.

0915 - Sample collection at GW-5 completed. All equipment was deconed and hole grouted

2C 2/7/01

Celotex 2/7/01

0915 - all parties arrived at GW-1. Because original GW-1, 2, 3 were over sewer line. Hill will be moved 20 ft west Terra Trace began boring.

0950 - Geoprobe refusal at 10 ft.

0955 - Terra Trace began extracting water from GW-1. Let well purge. See Photo's N and N

1012 - It was decided well point was purged enough and parties began sampling. Start collected total Metals/CN Dup at this location. See Photo N

1030 - Celotex consultant collecting spl. t & filtered Metals sample (Photo W)

1032 - GW-1 finished start took depth to GW measurement 3 ft 3 in. Terra Trace decon'd equipment Photo W

2/7/01

Celotex 2/7/01

1055 - Terra Trace began installing GW-2 sampling point. Geoprobe refusal at 13 ft.

~~1020~~

1107 Terra Trace pulled screen out of borehole because it was jamed Start had Terra Trace re-decon Screen prior to re-insertion.

1117 Terra Trace got geoprobe refusal at 13 ft after re inserting pnt GW-2

1123 Terra Trace began purging GW-2 Photo N

1133 - Start began collecting sample Photo N - Celotex consultant (AGE) collecting duplicate sample

1140 - Start found leak in Total metals sample bottle Start emptied bottle, re-preserved and refilled.

1200 - Sample collected from GW-2 - Depth to GW at GW-2 6.85 ft.

1200 - Terra Trace removed

2/7/01

Celotex 2/7/01

backhoe and decon'd (Photo S). Backhole filled w/ bentonite.

1225 - All parties agreed to collect the waste sample from the surface depression. Mark Wagner of IEPA began using Pick ax to cut hole for sample Photo S. Sample for Metals/Cn and D. ons will be collected.

1245 - Celotex lawyer expressed concern that pick ax was not decon'd Start decon'd pickax and dug new location

1752 IEPA Mark Wagner collects Sample from WST-1 (Photo N)

1330 - All parties broke for lunch

1415 All parties returned to site

1445 - Terra Trace began boring Temporary GW point 3. (See Photo W).

1455 - Terra Trace began purging with Temporary well point.

2/7/01

Celotex 2/7/01

1500 - Start began collecting samples

After Start collected samples and MS/MSD. ACE stated they forgot bottles and they had someone run back to get some more bottles for splits.

1525 - PRP returned w/ bottles and ACE began to take splits.

1535 - ACE finished collecting sample Terra Trace removed rod and decon'd. Photo NW.

1550 - Terra Trace began ~~Collect~~ inserting last sampling point GW-4. ~~Sto~~ See (Photo SW)

1605 - Terra Trace began purging GW-4 (Photo SE). Geoprobe refusal was at 10 ft.

* Backnote Geoprobe refusal was at 13 ft.

2/7/01

Celotex 2/8/01 ZC 2/7/01

1615 - After 15 min of purging - start began collecting samples

1630 - ACE collects split samples (Phote DW)

1690 - Sampling of GW-4 complete depth to water 2ft.

1645 - TT collected equip blank.

* Note as Start went to collect equip blank, Terra Trace stated they already collected it. Terra Trace collected sample after decon but did not rinse with DI beside water because it was last location. Equipment blank was Murky.

1700 - START packed all samples and all parties left the Site

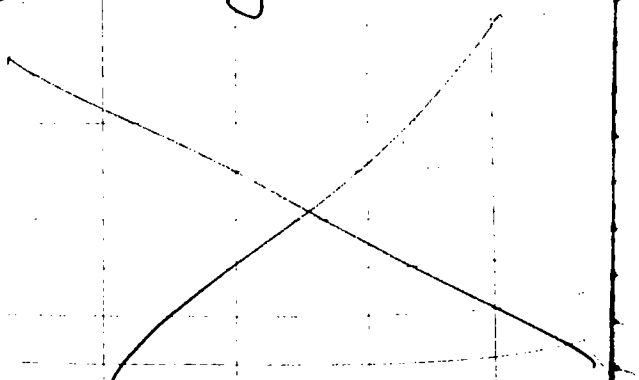
2/7/01

Celotex 2/8/01

0730 - Start, ACE, & ZC PRP lawyers and Neil onsite.

0815 - After looking at first location it was discovered that it was covered with ice. Start decided to break ice w/ pick ax and come back later to let sediment settle. - Start then continues to scout locations. Start Noted that conditions were difficult to access. Start proposed to EPA lawyer that we ZC we amend schedule to disclude Fri and include Mon. and Tue in sampling schedule. EPA lawyer said that was alright PRP lawyer ZC lawyer stated he would talk to his client. ZC Celotex lawyer ZC lawyer then proposed we move SW3 and Sed 3 further up stream and start

there. Staff informed Celtex that normal protocol is to start downstream and move upstream. They believed the distance was great enough that it would affect samples.
- all sediment samples were to be collected using auger with plastic auger sleeves. After sample is collected, sleeve will be labled and kept per homogenyate at end of the day.



2/8/01

SED 3 Start @ 9:50 am

Location was moved to about 100 yds. downstream of outfall.
- At Location: about 3 feet from bank, water depth about 2 feet.
- Collected water samples then sediment
- For sediment samples:

Attempts	Deployed (inches)	Recovery (inches)
1	12	6
2	12	6
3	6	3
4	6	2
5	15	3
6	12	2
	total	22

- Poor recovery may be associated with organic material (prevalent) plugging coring tip.

Celotex 2/8/01

1230 ZC

1115 – Celotex Attorney questioned feasability of finishing work today due to slow progress. START informed attorney that extra day may be needed to complete sampling. After speaking to his client, Attorney suggested more staff be brought in to complete work. START called RPM Jon Peterson to discuss situation. After speaking to PRP attorney Peter asked for 2 more samples. START arranged for 2 samples from Tec Associates to assist in sampling for Fri.

1230 – Start began Collecting Sediment and Surface Water Samples from Sed-5, approx. 30 yds upstream from outfall. Start Collected Surface water Samples first. Sediment Samples were then collected in approx 2 feet of water.

Celotex 2/8/01

– Recovery material would be characterized as silty clay w/ some Sand – Med to high moisture. After Sample collected Start Collected ZC decontaminate Equip w/ Alconox and distilled water. After decon, START and all other parties left for lunch at 1300.

1400 – START Returned to site. All other parties already present.

1430 – START collected Surface from ZC sed and SW-6 water samples first. It was decided that duplicate samples for sediment samples. During Sample collection of ZC recovery was small. – Sediment was silty clay / w some sand. Moisture was low to medium. After collecting enough sed. for sample and duplicate. Start deconed equip and moved on to Sed-7

Celotex 2/8/01

1615 - START began to collect SW-7. START collected 1 sample for metals on CN. Upon completion START began to collect Sed-7 Sample. Recovery was poor, so sample collection required several attempts. Sediment was sandy clay. Moisture was low. After enough volume was collected START decided to finish for the day. Equipment was decon'ed and samples packed. AC+E suggested we use their lab to homogenize and bottle samples. START agreed. START and other parties left the site at 1730.

1800 - START and AC+E arrived at AC+E laboratory. START began to homogenize samples from auger sleeves in stainless steel bowl. The samples were quarted and split between START and AC+E.

2/8/01

Celotex 2/8/01

2000 - START and AC+E finished splitting sediment samples. START packed samples and left laboratory.

2/8/01

Celotex 2/9/01

0730 - Start, TN associates, AC+E arrived onsite. Kanhaka River and forked creek had risen about 1/2 foot overnight. It was decided to go ahead w/sampling. One Start crew and ACE crew went to do sediment and one Start and ACE crew went to do Surface Water.

0845 - Start began SW and Sed samples at Sed and Stat-7 ~~2c~~ Sed4, SW4. Recovery for Sed was difficult. Sed was sandy clay with alot of organic material after collecting Nikels/CN SW sample and ~~2c~~ about 2 1/2 ~~2c~~ 26 oz of Sed.

~~H2c~~

1100 - START began collection of Sed9 and SW-7 ~~2c~~ Again recovery was difficult due to tree roots and other organic material. Sediment was sandy clay w/ some silt. Start had to advance spoon 4 times

to collect suffient volume ~~Tetra~~ ~~2c~~ START Also collected An MS/MSD for SW-2 sample at this location

1230 - START + ACE arrived at SW1 and Sed1. River had risen approx 2-3 feet acc sample location. All parties agreed to move location Approx 30 ft NE for safety reasons. Soil was dark silt and sand.

1330 - All parties left for lunch.

1430 - All parties returned from lunch. TN+Associats and ACE went to collect water sample from MW-102.

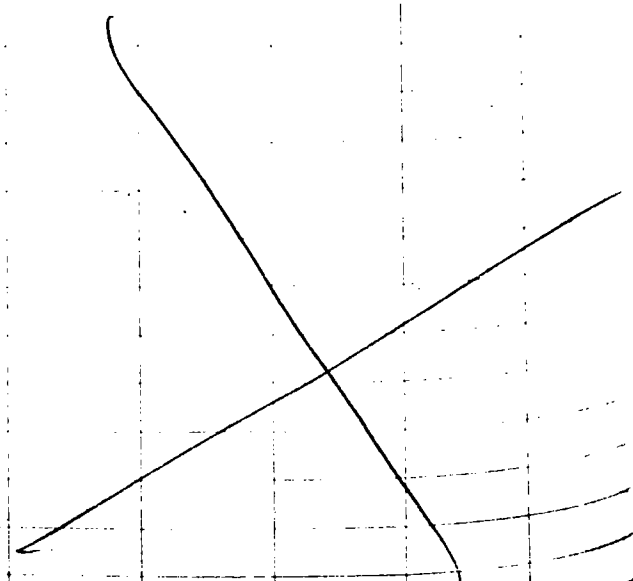
1530 - START began collecting Sed 2 and SW8 in Slough area. Sediment recovery was very difficult. Sediment consisted primarily of Organic, humus, and dark silt. START had to advance auger approx.

Celotex 2/5/01

15 tins per required Vol.

1620 - START Collected Sed sample Sed-8 near MW 102. Sed was stiff clay and silt. Auger was advanced 4 times for proper recovery.

1730 - All parties left site to go to ACE lab in joliet to homogenze and split samples.



2/5/01

APPENDIX D

VALIDATED ANALYTICAL DATA PACKAGE

(86 Pages)

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: March 13, 2001

SUBJECT: Review of Data
Received for Review on February 22, 2001

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: Tetra Tech

We have reviewed the data by CADRE for the following case:

SITE NAME: Celotex Corp.

CASE NUMBER: 28959 SDG NUMBER: ME04X3

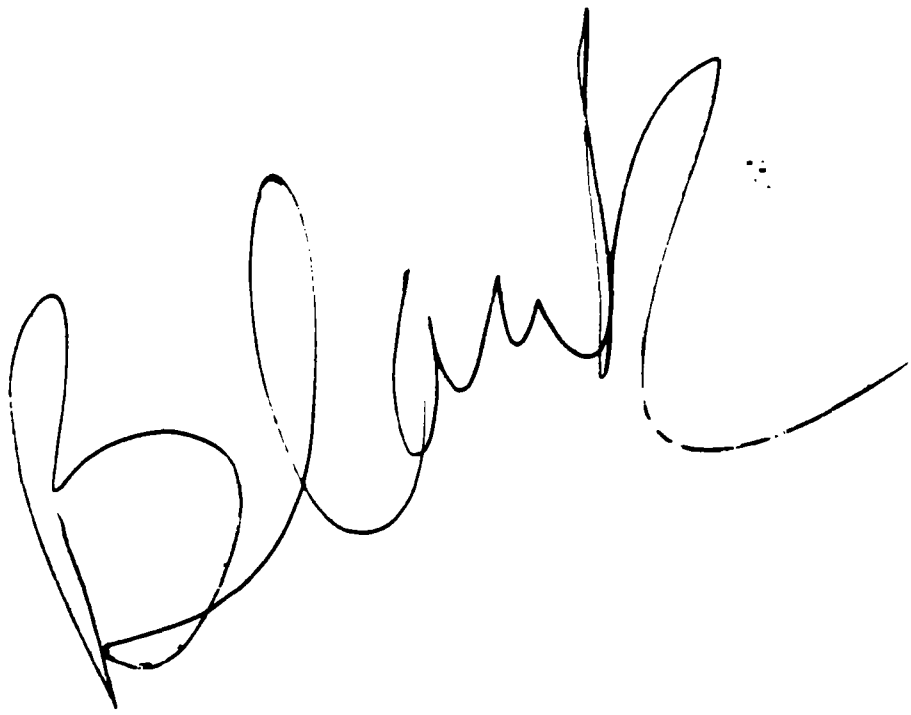
Number and Type of Samples: 20 waters

Sample Numbers: ME04X3,4,7; ME0KP7,9; ME0KQ1,2,4-9; ME0KR1,4-8, ME0KS0

Laboratory: Compuchem Hrs. for Review:

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J



Case Number : 28959
Site Name: Celotex Corp.

SDG Number: ME04X3
Laboratory: Compuchem

Below is a summary of the out-of-control audits and the possible effects on data for this case:

Twenty water samples numbered ME04X3, ME04X4, ME04X7, ME0KP7, ME0KP9, ME0KQ ME0KQ2, ME0KQ4-9, ME0KR1, ME0KR4-8, and ME0KS0 were collected on February 7 2001. The lab received the samples on February 14, 2001 in good condition. All samples were analyzed for metals; only nineteen of the samples were analyzed for cyanide. All samples were analyzed using CLP SOW ILM04.1 anal procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using the MIDI Distillation procedure. The remainin inorganic analyses were performed using an Inductively Coupled Plasma-Atomi Emission Spectrometric procedure.

Sample ME04X4 is listed as a rinse sample in one column on the chain-of-custody, ~~but it is also listed as a high-level waste~~ in another column. Ma of the analyte concentrations are higher than those of the rest of the samp in this SDG, so this sample will not be treated as a field blank.

what does this mean? This is EB!

Reviewed By: J. Ganz
Date: March 13, 2001

1. **HOLDING TIME:**

HOLDING TIME CRITERIA

Incrganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

No problems were found for this qualification.

2. **CALIBRATIONS:**

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems were found for this qualification.

3. **BLANKS:**

LABORATORY BLANKS CRITERIA

DC-284: The following inorganic samples are associated with a blank

Reviewed By: J. Ganz
Date: March 13, 2001

concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Aluminum
ME0KR8, ME0KS0

Beryllium
ME04X4, ME04X7, ME0KP7, ME0KQ1, ME0KQ4, ME0KQ5
ME0KQ6, ME0KQ8, ME0KQ9, ME0KR4, ME0KR6, ME0KR8
ME0KS0

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME04X3, ME04X7, ME0KP7, ME0KP9, ME0KQ1, ME0KQ2
ME0KQ4, ME0KQ5, ME0KQ6, ME0KQ7, ME0KQ8, ME0KQ9
ME0KR1, ME0KR4, ME0KR5, ME0KR6, ME0KR7, ME0KR8
ME0KS0

The following samples are associated with a negative blank concentration whose absolute value is greater than the IDL. The sample concentration is greater than the IDL but less than 5 times the absolute value of the blank concentration. Hits are qualified "J". Some non-detect concentration values are sufficiently high that the detection limit may be elevated. These non-detects are qualified "UJ".

ME04X3
Copper, Zinc, Cyanide

ME04X7
Zinc, Cyanide

ME0KP7
Copper, Zinc, Cyanide

ME0KP9
Cyanide

Reviewed By: J. Ganz
Date: March 13, 2001

ME0KQ1
Copper, Zinc, Cyanide

ME0KQ2
Cyanide

ME0KQ4
Cyanide

ME0KQ5
Cyanide

ME0KQ6
Copper, Zinc, Cyanide

ME0KQ7
Copper, Zinc

ME0KQ8
Copper, Zinc, Cyanide

ME0KQ9
Copper, Zinc, Cyanide

ME0KR1
Copper, Zinc, Cyanide

ME0KR4
Cyanide

ME0KR5
Copper, Zinc, Cyanide

ME0KR6
Cyanide

ME0KR7
Copper, Zinc, Cyanide

ME0KR8
Copper, Zinc, Cyanide

ME0KS0
Aluminum, Copper, Cyanide

Reviewed By: J. Ganz
Date: March 13, 2001

Case Number : 28959
Site Name: Celotex Corp.
SDG Number: ME04X3
Laboratory: Compuchem

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

MATRIX SPIKE CRITERIA

Inorganic

Percent Recovery Limits	
Upper	125.0
Lower	75.0
Extreme lower	30.0

No problems were found for the matrix spike or the laboratory control sample audits.

5. LABORATORY AND FIELD DUPLICATE

Samples ME0KQ9 and ME0KR1 are field duplicates.

The following results are associated with field duplicate results which did meet relative percent difference (RPD) primary criteria. The National Functional Guidelines require that all data, hits and non-detects, be qualified "J". However, in accordance with a ruling made by the region 5 TOPO, hits be qualified "J" and non-detects will be qualified "UJ".

Iron
ME04X3, ME04X4, ME04X7, ME0KP7, ME0KP9, ME0KQ1
ME0KQ2, ME0KQ4, ME0KQ5, ME0KQ6, ME0KQ7, ME0KQ8
ME0KQ9, ME0KR1, ME0KR4, ME0KR5, ME0KR6, ME0KR7
ME0KR8, ME0KS0

The following results are associated with field duplicate results which did meet absolute difference primary criteria. The National Functional Guidelines require that all data, hits and non-detects, be qualified "J". However, in accordance with a ruling made by the region 5 TOPO, hits will be qualified and non-detects will be qualified "UJ".

Aluminum
ME04X3, ME04X4, ME04X7, ME0KP7, ME0KP9, ME0KQ1

Reviewed By: J. Ganz
Date: March 13, 2001

ME0KQ2, ME0KQ4, ME0KQ5, ME0KQ6, ME0KQ7, ME0KQ8
ME0KQ9, ME0KR1, ME0KR4, ME0KR5, ME0KR6, ME0KR7
ME0KR8, ME0KS0

6. ICP ANALYSIS

DC-294: The analyte concentration is high (>50 X the IDL) and the serial dilution percent difference is not in control (>10%). Hits are qualified "J".

Potassium
ME04X3, ME04X4, ME04X7, ME0KP7, ME0KP9, ME0KQ1
ME0KQ2, ME0KQ4, ME0KQ5, ME0KQ6, ME0KQ7, ME0KQ8
ME0KQ9, ME0KR1, ME0KR4, ME0KR5, ME0KR6, ME0KR7
ME0KR8, ME0KS0

7. GFAA ANALYSIS

No GFAA analyses were performed for this case.

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

Reviewed By: J. Ganz
Date: March 13, 2001

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numeri value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limi is approximate and may or may not represent the action limit quantitation necessary to accurately and precisely measure t analyte in the sample.
R	The data are unusable. (The compound may or may not be prese

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME04X3
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : J. GANZ
Date : MARCH 13, 2001

Number of Soil Samples : 0
Number of Water Samples : 20

Sample Number :	ME0KP7		ME0KP9		ME0KQ1		ME0KQ2		ME0KQ4	
Sampling Location :	GW-1(U)		GW-2(U)		GW1(UMD)		GW-3		GW-4	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/7/01		2/7/01		2/7/01		2/7/01		2/7/01	
Time Sampled :	10:12		11:33		10:12		15:00		16:15	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	1000	J	977	J	732	J	1080	J	1530	J
ANTIMONY	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
ARSENIC	7.6		142		7.5		114		16.5	
BARIUM	134		907		134		945		129	
BERYLLIUM	0.20	J	0.10	U	0.25	J	0.10	U	0.28	J
CADMIUM	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U
CALCIUM	146000		159000		147000		151000		150000	
CHROMIUM	5.8		7.0		4.6		14.2		11.6	
COBALT	4.9		5.7		4.6		7.4		3.5	
COPPER	4.4	J	15.0		2.8	J	10.6		11.8	
IRON	10800	J	33600	J	10100	J	25800	J	19500	J
LEAD	1.7	U	25.5		1.7	U	6.0		6.9	
MAGNESIUM	51200		73700		51600		62100		70600	
MANGANESE	700		269		664		975		1580	
MERCURY	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
NICKEL	10.8		21.8		10.2		17.2		13.8	
POTASSIUM	1960	J	5150	J	1920	J	7490	J	2540	J
SELENIUM	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
SILVER	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
SODIUM	43300		70900		44300		74700		52000	
THALLIUM	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U
VANADIUM	2.2		5.6		1.7		9.7		6.0	
ZINC	7.2	J	61.5		4.1	J	25.2		32.5	
CYANIDE	1.6	J	0.60	U	1.3		3.5		1.4	J

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME04X3
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : J. GANZ
Date : MARCH 13, 2001

Sample Number :	ME0KQ5		ME0KQ6		ME0KQ7		ME0KQ8		ME0KQ9	
Sampling Location :	SW-2		SW-6		SW-7		SW-8		MW102(U)	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/9/01		2/8/01		2/8/01		2/9/01		2/9/01	
Time Sampled :	11:00		14:30		16:15		15:30		14:50	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	4930	J	504	J	642	J	1500	J	944	J
ANTIMONY	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
ARSENIC	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U
BARIUM	65.0		41.7		42.0		44.4		45.8	
BERYLLIUM	0.18	J	0.20	J	0.10	U	0.26	J	0.27	J
CADMIUM	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U
CALCIUM	35800		79500		78400		55900		102000	
CHROMIUM	6.8		1.1		1.3		2.6		2.1	
COBALT	3.2		0.70	U	0.75		0.70	U	0.70	U
COPPER	11.2		1.6	J	2.7	J	4.3	J	1.7	J
IRON	8380	J	774	J	994	J	2340	J	1490	J
LEAD	6.2		1.7	U	1.7	U	3.0		1.7	U
MAGNESIUM	15800		33800		34300		21500		40800	
MANGANESE	228		31.3		32.9		103		198	
MERCURY	0.10	U	0.10	U	0.10	U	0.10	U	0.10	U
NICKEL	10.6		2.4		1.9		3.6		3.3	
POTASSIUM	5120	J	1820	J	1760	J	3250	J	847	J
SELENIUM	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
SILVER	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
SODIUM	6740		15900		16500		14400		35300	
THALLIUM	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U
VANADIUM	10.7		0.97		2.0		2.9		1.6	
ZINC	29.5		1.1	UJ	4.1	J	11.8	J	2.6	J
CYANIDE	1.3	J	1.1	J	0.60	U	1.7	J	0.60	U

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME04X3
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : J. GANZ
Date : MARCH 13, 2001

Sample Number :	ME0KR1		ME0KR4		ME0KR5		ME0KR6		ME0KR7	
Sampling Location	MW102(U-D)		SW-1		SW-5		SW-4		SW-6	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/9/01		2/9/01		2/8/01		2/9/01		2/8/01	
Time Sampled :	14:50		12:30		12:30		08:45		14:30	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	646	J	3710	J	396	J	5230	J	518	J
ANTIMONY	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
ARSENIC	4.2	U	4.2	U	4.2	U	4.2	U	4.2	U
BARIUM	46.7		69.4		46.5		67.8		40.2	
BERYLLIUM	0.10	U	0.46	J	0.10	U	0.53	J	0.10	U
CADMIUM	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U
CALCIUM	105000		60800		86600		40100		77300	
CHROMIUM	1.0		5.4		1.2		6.8		1.1	
COBALT	0.70	U	2.4		0.70	U	3.2		0.70	U
COPPER	2.1	J	9.0		2.4		10.8		2.2	
IRON	1100	J	6670	J	827	J	8470	J	801	J
LEAD	1.7	U	5.7		1.7	U	6.6		1.2	U
MAGNESIUM	41800		21300		34000		17700		33000	
MANGANESE	14.0		324		58.4		239		29.1	
MERCURY	0.10	U	0.10	U	0.10	U	0.10		0.10	U
NICKEL	2.7		8.6		2.2		10.4		2.2	
POTASSIUM	885	J	4720	J	2170	J	4730	J	1730	J
SELENIUM	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
SILVER	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
SODIUM	36700		12900		17900		7590		15600	
THALLIUM	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U
VANADIUM	0.90		7.9		0.75		11.1		1.2	
ZINC	2.2	J	27.8		1.4	J	30.6		1.1	UJ
CYANIDE	0.96		0.70	U	1.4		1.3		1.0	U

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME04X3
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : J. GANZ
Date : MARCH 13, 2001

Sample Number :	ME0KR8		ME0KS0		ME04X3		ME04X4		ME04X7	
Sampling Location :	MW-101		MW101(M)		SW-3		EB-1		GW-5	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/9/01		2/9/01		2/8/01		2/8/01		2/7/01	
Time Sampled :	08:40		08:40		09:50		09:50		08:30	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	145	J	105	J	262	J	14200	J	4810	J
ANTIMONY	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
ARSENIC	4.2	U	4.2	U	4.2	U	8.7		4.2	U
BARIUM	239		180		43.6		196		112	
BERYLLIUM	0.26	J	0.30	J	0.10	U	1.1	J	0.22	J
CADMIUM	1.7		0.63		0.60	U	0.60	U	0.60	
CALCIUM	151000		149000		82500		84000		210000	
CHROMIUM	1.6		0.76		1.0		233		12.3	
COBALT	0.70	U	0.70	U	0.70	U	16.7		3.2	
COPPER	4.8		1.2		1.9		36.5		11.6	
IRON	12900	J	8930	J	553	J	64200	J	8090	J
LEAD	3.3		1.7	U	1.7	U	38.6		2.6	
MAGNESIUM	73200		72400		31100		31300		150000	
MANGANESE	186		177		50.0		1830		128	
MERCURY	0.11		0.10	U	0.10	U	0.15		0.10	U
NICKEL	1.6		1.3		2.2		43.5		12.3	
POTASSIUM	25500	J	25100	J	2540	J	2720	J	1880	J
SELENIUM	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
SILVER	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
SODIUM	22600		22300		20300		12600		72900	
THALLIUM	6.2	U	6.2	U	6.2	U	7.4		6.2	U
VANADIUM	1.0		0.74		0.84		30.6		7.7	
ZINC	1.9	J	1.1	U	2.8	J	148		20.8	J
CYANIDE	0.60	U	0.60	U	1.1	J			1.2	J

38.6 exceeds ambient water

when not EB-1

IITRI
IIT RESEARCH INSTITUTE

IIT Research Institute ESAT Region 5
536 South Clark Street, Suite 1050; Chicago, IL 60605
Telephone (312) 353-8302 Facsimile (312) 353-8307

Date: March 2, 2001

To: Luba Finkelberg, EPA TOPO

From: Steffanie Tobin, ESAT Chemist

Thru: Mel Kaminsky, ESAT Program Manager

Copies: John Ganz, Inorganic Data Review Lead
Jay Thakkar, ESAT Contract RPO

Ref: TDF# 5-04-007
TO# 05-0-04
Contract # 68-W-01-014

SUBJECT: Data Case 28959, SDG# ME04X6: Validation of Inorganic Analytical Data for Samples from Celotex Corp. Site.

Attached is the deliverable for Case 28959, SDG# ME04X6: Validation of inorganic results for 10 water samples. Included in the deliverable is the case narrative. If you have any question please contact John Ganz.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: March 2, 2001

SUBJECT: Review of Data
Received for Review on February 26, 2001

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

TO: Data User: TeTra Tech

We have reviewed the data for the following case:

Site name: Celotex Corp.

Case number: 28959 **SDG NUMBER:** ME04X6

Number and Type of Samples: 10 water samples

Sample Numbers: ME04X6, 8, MEOKP6, 8, MEOKQ0, 3, MEOKR0, 2, 9, MEOKS1

Laboratory: Compuchem **Hrs. for Review:**

Following are our findings:

CC: Cecilia Luckett
Region 5 TPO

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME04X6
Laboratory: Compuchem

Mail Code: SM-5J

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Ten water samples, numbered ME04X6, ME04X8, MEOKP6, MEOKP8, MEOKQ0, MEOKQ3, MEOKR0, MEOKR2, MEOKR9, MEOKS1 were collected on 02/07-09/01. The lab received the samples on 02/14/01 The temperature for the samples was 6°C upon received. Sample MEOKS1 was analyzed for cyanide only. The remaining samples were analyzed for metals and cyanide. All samples were analyzed using CLP SOW ILM04.0 analysis procedures.

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using MID Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atom Emission Spectrometric procedure.

Reviewed by: Steffanie Tobin (IITRI/ESAT)
Date: March 1, 2001

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME04X6
Laboratory: Compuchem

1. HOLDING TIME:

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

No problems were found for this qualification.

2. CALIBRATIONS:

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems were found for this qualification.

3. BLANKS:

LABORATORY BLANKS CRITERIA

The following inorganic samples are associated with a negative blank concentration whose absolute value is greater than the instrument detection limit (IDL). The sample concentration is greater than the IDL and less than five times the absolute value of the blank concentration. Hits are qualified "J". Some non-detect concentration readings ar

sufficiently high that the negative blank reading may have caused the IDL to be elevated. These non-detects are flagg "UJ".

Aluminum
ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ3, ME0KR2

Beryllium
ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ0, ME0KQ3, ME0KR2

Zinc
ME04X8

Cyanide
ME04R9, ME0KS1

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the bl concentration. Hits are qualified "J"; non-detects are not flagged.

Aluminum
ME04X8, ME0KP6, ME0KP8, ME0KQ3, ME0KR2

Beryllium
ME04X8, ME0KQ3, ME0KR2

Copper
ME04X8, ME0KQ0, ME0KR0, ME0KR9

Mercury
ME0KP8, ME0KQ0, ME0KQ3, ME0KR0, ME0KR2

Cyanide
ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ0, ME0KQ3, ME0KR0, ME0KR2

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ0, ME0KQ3, ME0KR0, ME0KR2, ME0KR9, ME0KS1

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME04X6
Laboratory: Compuchem

MATRIX SPIKE CRITERIA

Inorganic

Percent Recovery Limits

Upper	125.0
Lower	75.0
Extreme lower	30.0

DC-267: The following inorganic samples are associated with a matrix spike recovery which is high (>125%). Hits are qualified "J" and non-detects are not flagged.

Selenium
ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ0, ME0KQ3, ME0KR0, ME0KR2, ME0KR9

5. LABORATORY AND FIELD DUPLICATE

Samples ME0KR0/ME0KR2, ME0KP8/ME0KQ0 and ME0KR9/ME0KS1 were identified as field duplicates.

No problems were found for this qualification.

6. ICP ANALYSIS

DC-294: The analyte concentration is high (>50 X the IDL) and serial dilution percent difference is not in control (>10%). All associated data are qualified "J" according to national guideline. However, the new Region V guideline requires all hits are qualified "J" and non-detects are flagged. "UJ" .

Potassium
ME04X6, ME04X8, ME0KP6, ME0KP8, ME0KQ0, ME0KQ3, ME0KR0, ME0KR2, ME0KR9

7. GFAA ANALYSIS

NA

8. SAMPLE RESULTS

The following inorganic samples are associated with an ICP duplicate injection percent RSD which is greater than 20% and the sample results are reported above the CRDL. The data must be qualified using professional judgement. All associated data are estimated "J".

Reviewed by: Steffanie Tobin (IITRI/ESAT)
Date: March 1, 2001

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME04X6
Laboratory: Compuchem

Aluminum
ME04X8, ME0KP6, ME0KP8, ME0KQ3, ME0KR2

All data, except those qualified above, are acceptable.

Reviewed by: Steffanie Tobin (IITRI/ESAT)
Date: March 1, 2001

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 28959
Site : CELOTEX CORP.
Lab. : COMPUCHEM
Reviewer : S. TOBIN
Date : 03/02/2001

SDG : ME04X6

Number of Soil Samples : 0
Number of Water Samples : 10

Sample Number :	ME0KP6		ME0KP8		ME0KQ0		ME0KQ3		ME0KR0	
Sampling Location :	GW-1(F)		GW-2(F)		GW-2(FCD)		GW-3(F)		MW102(F)	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/7/01		2/7/01		2/7/01		2/7/01		2/9/01	
Time Sampled :	10:12		11:33		11:33		15:00		14:50	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	25.5	J	20.4	J	15.1	U	28.3	J	15.1	U
ANTIMONY	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U
ARSENIC	6.5		131		129		100		4.2	U
BARIUM	120		921		884		887		41.0	
BERYLLIUM	0.10	UJ	0.10	UJ	0.10	UJ	0.21	J	0.10	U
CADMIUM	0.60	U	0.60	U	0.60	U	0.60	U	0.60	U
CALCIUM	135000		161000		154000		139000		103000	
CHROMIUM	0.65		1.1		1.2		0.86		0.50	U
COBALT	3.9		2.9		2.8		6.2		0.70	U
COPPER	0.70	U	0.70	U	0.77		0.70	U	0.90	
IRON	7280		27200		25400		15500		14.2	U
LEAD	1.7	U	1.7	U	1.7	U	1.7	U	1.7	U
MAGNESIUM	47300		75200		71900		57400		40800	
MANGANESE	608		170		153		865		0.10	U
MERCURY	0.10	U	0.10	J	0.17	J	0.14	J	0.11	J
NICKEL	7.3		12.3		10.9		9.7		1.9	
POTASSIUM	1550	J	4780	J	4550	J	6910	J	594	J
SELENIUM	4.8	U	4.8	U	4.8	U	4.8	U	4.8	U
SILVER	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
SODIUM	40700		71100		68500		71100		34900	
THALLIUM	6.2	U	6.2	U	6.2	U	6.2	U	6.2	U
VANADIUM	0.70	U	1.5		1.4		0.99		0.70	U
ZINC	1.1	U	1.1	U	1.1	U	1.1	U	1.1	U
CYANIDE	1.6	J	4.6	J	4.0	J	3.6	J	0.73	J

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME04X6
Site : CELOTEX CORP.
Lab. : COMPUCHEM
Reviewer : S. TOBIN
Date : 03/02/2001

Number of Soil Samples : 0
Number of Water Samples : 10

Sample Number :	ME0KR2		ME0KR9		ME0KS1		ME04X6		ME04X8	
Sampling Location :	MW102(FD)		MW101(F)		MW101(MF)		GW-4(F)		GW-5(F)	
Matrix :	Water		Water		Water		Water		Water	
Units :	ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :	2/9/01		2/9/01		2/9/01		2/7/01		2/7/01	
Time Sampled :	14:50		08:40		08:40		16:15		08:30	
%Solids :	0.0		0.0		0.0		0.0		0.0	
Dilution Factor :	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	22.8	J	15.1	U			15.1	UJ	19.7	J
ANTIMONY	2.5	U	2.5	U			2.5	U	2.5	U
ARSENIC	4.2	U	4.2	U			4.2	U	4.2	U
BARIUM	43.1		142				95.9		79.6	
BERYLLIUM	0.18	J	0.10	U			0.10	UJ	0.11	J
CADMIUM	0.60	U	0.60	U			0.60	U	0.60	U
CALCIUM	108000		149000				113000		192000	
CHROMIUM	0.50	U	0.70				0.81		0.50	U
COBALT	0.70	U	0.70	U			1.1		0.70	U
COPPER	0.70	U	0.91	J			0.70	U		
IRON	14.2	U	5860				330		14.2	U
LEAD	1.7	U	1.7	U			1.7	U		
MAGNESIUM	42700		73100				61000		142000	
MANGANESE	0.10	U	166				1130		17.0	
MERCURY	0.12	J	0.10	U			0.10	U	0.10	U
NICKEL	1.3	U	1.3	U			6.8		2.3	
POTASSIUM	642	J	23800	J			1810	J	465	J
SELENIUM	4.8	U	4.8	U			4.8	U	4.8	U
SILVER	0.50	U	0.50	U			0.50	U	0.50	U
SODIUM	36300		22600				50700		69900	
THALLIUM	6.2	U	6.2	U			6.2	U	6.2	U
VANADIUM	0.70	U	0.70	U			0.70	U	0.70	U
ZINC	1.1	U	1.1	U			1.1	U	8.6	J
CYANIDE	0.73	J	0.60	UJ	0.60	UJ	1.0	J	2.2	J

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: March 12, 2001

SUBJECT: Review of Data
Received for Review on February 22, 2001

FROM: Stephen L. Ostrodka, Chief (SRT-4J)
Superfund Technical Support Section

TO: Data User: Tetra Tech

We have reviewed the data by CADRE for the following case:

SITE NAME: Celotex Corp. (IL)

CASE NUMBER: 28959 SDG NUMBER: ME04T8

Number and Type of Samples: 11 soils

Sample Numbers: ME04T8-9, ME04W0-7, ME04X0

Laboratory: Compuchem Hrs. for Review: _____

Following are our findings:

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Case: 28959
Site: Celotex Corp. (IL)

SDG: ME04T8
Laboratory: Compuchem

Below is a summary of the out-of-control audits and the possible effects on data for this case:

Eleven (11) soil samples, numbered ME04T8-9, ME04W0-7, and ME04X0, were collected on February 8-9, 2001. The lab received the samples on February 13, 2001 in good condition. All samples were analyzed for metals cyanide. All samples were analyzed using CLP SOW ILM04.0 analysis procedur

Mercury analysis was performed using a Cold Vapor AA Technique. Cyanide analysis was performed using MIDI Distillation procedure. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomi Emission Spectrometric procedure.

Case: 28959
Site: Celotex Corp. (IL)

SDG: ME04T8
Laboratory: Compuchem

Reviewed By: _____
Date: _____

Reviewed By: _____
Date: _____

1. **HOLDING TIME:**

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time --		------- pH -------	
	Primary	Expanded	Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

DC-280: The following inorganic soil samples were reviewed for holding time violations using criteria developed for water samples.

ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

2. **CALIBRATIONS:**

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary ---		-- Expanded ---	
	Low	High	Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems were found for this qualification.

Reviewed By: _____

Date: _____

3. **BLANKS:**

LABORATORY BLANKS CRITERIA

DC-283: The following inorganic samples are associated with a blank analyte with negative concentration whose absolute value is greater than the instrument detection limit (IDL). Some sample concentrations are greater than the IDL and less than five times the absolute value of the blank concentration. Hits are qualified "J". Some non-detect concentration readings are sufficiently high that the negative blank reading may have caused the IDL to be elevated. These non-detects are flagged "UJ".

ME04T8
Sodium, Cyanide

ME04T9
Sodium, Cyanide

ME04W0
Sodium, Cyanide

ME04W1
Sodium, Cyanide

ME04W2
Sodium, Cyanide

ME04W3
Sodium, Cyanide

ME04W4
Sodium, Cyanide

ME04W5
Sodium, Cyanide

ME04W6
Sodium, Cyanide

Reviewed By: _____
Date: _____

ME04W7
Sodium, Cyanide

ME04X0
Sodium

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times the blank concentration. Hits are qualified "J"; non-detects are not flagged.

Beryllium
ME04W0, ME04W2, ME04W6, ME04X0

Mercury
ME04T8,ME04T9, ME04W0, ME04W1
ME04W5, ME04W6

Sodium
ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

DC-338: During review of the following inorganic samples, the reported IDL/default CRDL value was used for cyanide.

ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

MATRIX SPIKE CRITERIA

Inorganic

Percent Recovery Limits	
Upper	125.0
Lower	75.0
Extreme lower	30.0

Reviewed By: _____

Date: _____

Case: 28959
Site: Celotex Corp. (IL)

SDG: ME04T8
Laboratory: Compuchem

DC-268: The following inorganic samples are associated with a matrix spike recovery which is low (30-74 %) indicating that sample results may be biased low.
Hits are qualified "J" and non-detects are qualified "UJ".

Antimony
ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

No problems were found for the laboratory control sample.

5. LABORATORY AND FIELD DUPLICATE

The following inorganic samples are associated with field duplicate results which did not meet absolute difference criteria. The field duplicate samples are ME04W3/ME04W7.
Hits are qualified "J" and non-detects are qualified "UJ".

Mercury
ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

6. ICP ANALYSIS

DC-294: The analyte concentration is high (>50 X the IDL) and serial dilution percent difference is not in control (>10%).
All associated data are qualified "J".

Potassium
ME04T8, ME04T9, ME04W0, ME04W1, ME04W2, ME04W3
ME04W4, ME04W5, ME04W6, ME04W7, ME04X0

7. GFAA ANALYSIS

No GFAA were performed for this case.

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

Reviewed By: _____
Date: _____

Case: 28959
Site: Celotex Corp. (IL)

SDG: ME04T8
Laboratory:
Compuchem

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Reviewed By: _____

Date: _____

Analytical Results (Qualified Data)

Case # 28959 SDG : ME04T8
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : M. MATTOX
Date : 03/12/01

Number of Soil Samples : 11
Number of Water Samples : 0

Sample Numbe	ME04T8		ME04T9		ME04W0		ME04W1		ME04W2	
Sampling Loca	SED-1		SED-2		SED-3		SED-4		SED-5	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled	2/9/01		2/9/01		2/8/01		2/9/01		2/8/01	
Time Sampled	12:30		15:30		09:50		08:45		12:30	
%Solids :	67.6		55.8		73.3		73.9		76.3	
Dilution Factor	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	10500		11400		6760		6910		6090	
ANTIMONY	0.74	UJ	0.86	UJ	0.67	UJ	0.65	UJ	0.60	UJ
ARSENIC	8.4		5.8		5.1		4.4		4.0	
BARIUM	105		108		79.2		64.9		72.3	
BERYLLIUM	0.76		0.83		0.47	J	0.56		0.48	J
CADMIUM	0.20		0.21	U	0.83		0.18		0.14	
CALCIUM	26100		13000		29500		19900		19000	
CHROMIUM	17.5		18.7		11.3		11.4		11.8	
COBALT	8.1		7.5		5.9		5.1		5.2	
COPPER	24.6		25.6		17.0		13.5		15.6	
IRON	21800		21000		15100		15400		13500	
LEAD	32.0		44.4		33.1		23.0		37.3	
MAGNESIUM	11500		7230		9820		7980		8610	
MANGANESE	778		595		552		253		378	
MERCURY	0.13	J	0.17	J	0.19	J	0.13	J	0.66	J
NICKEL	19.8		20.9		13.3		13.6		17.6	
POTASSIUM	1420	J	1290	J	853	J	774	J	869	J
SELENIUM	1.5		1.8		1.4		1.3		1.2	
SILVER	0.15	U	0.17	U	0.13	U	0.13	U	0.12	U
SODIUM	299		364		404		273		261	
THALLIUM	1.8	U	2.1	U	1.7	U	1.6	U	1.5	U
VANADIUM	22.7		25.0		15.3		16.7		13.9	
ZINC	86.6		99.4		127		60.7		61.8	
CYANIDE	0.12	J	0.10		0.11		0.040	UJ	0.090	

Case #: 28959 SDG . ME04T8
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : M. MATTOX
Date : 03/12/01

Sample Numbe	ME04W3		ME04W4		ME04W5		ME04W6		ME04W7	
Sampling Loca	SED-6		SED-7		SED-8		SED-9		SED-6D	
Matrix :	Soil		Soil		Soil		Soil		Soil	
Units :	mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled	2/8/01		2/8/01		2/9/01		2/9/01		2/8/01	
Time Sampled	14:30		16:15		16:20		11:00		14:30	
%Solids :	75.7		71.3		66.4		76.4		77.0	
Dilution Factor	1.0		1.0		1.0		1.0		1.0	
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	7010		10900		8720		5400		6630	
ANTIMONY	0.69	J	0.64	UJ	0.71	UJ	0.81	UJ	0.63	UJ
ARSENIC	4.7		6.1		4.3		5.6		4.5	
BARIUM	79.8		106		84.6		56.2		69.3	
BERYLLIUM	0.55		0.72		0.63		0.38	J	0.54	
CADMIUM	0.18		0.31		0.17	U	0.16	U	0.15	U
CALCIUM	14600		13400		16100		86600		13600	
CHROMIUM	12.3		23.6		14.1		8.5		11.6	
COBALT	5.4		6.7		7.4		4.8		4.9	
COPPER	24.5		38.3		15.6		10.6		22.3	
IRON	14800		20400		19600		15100		13400	
LEAD	55.3		40.1		15.6		15.6		46.5	
MAGNESIUM	6430		7250		9440		14500		6390	
MANGANESE	474		393		904		660		383	
MERCURY	2.0	J	0.61	J	0.12	J	0.090	J	0.44	J
NICKEL	14.2		18.9		16.3		10.6		13.3	
POTASSIUM	854	J	1360	J	1250	J	1050	J	807	J
SELENIUM	1.2	U	1.3		1.5		1.2	U	1.2	U
SILVER	0.13	U	0.13	U	0.14	U	0.12	U	0.13	U
SODIUM	279	J	322		246		309		286	
THALLIUM	1.6	U	1.6	U	1.8	U	1.5	U	1.6	U
VANADIUM	15.7		23.0		18.3		13.2		14.6	
ZINC	80.7		102		60.5		44.9		74.7	
CYANIDE	0.070	J	0.080		0.16		0.040	UJ	0.040	

Case # 28959 SDG : ME04T8
Site : CELOTEX CORP.
Lab. : LIBRTY
Reviewer : M. MATTOX
Date : 03/12/01

Sample Numbe	ME04X0									
Sampling Loca	WST-1									
Matrix :	Soil									
Units :	mg/Kg									
Date Sampled	2/9/01									
Time Sampled	00:00									
%Solids :	44.3									
Dilution Factor	1.0									
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	9650									
ANTIMONY	4.3	J								
ARSENIC	1.9	U								
BARIUM	112									
BERYLLIUM	0.32	J								
CADMIUM	1.7									
CALCIUM	7850									
CHROMIUM	49.0									
COBALT	5.5									
COPPER	205									
IRON	7450									
LEAD	209									
MAGNESIUM	2110									
MANGANESE	195									
MERCURY	0.63	J								
NICKEL	17.6									
POTASSIUM	613	J								
SELENIUM	2.1	UJ								
SILVER	2.5									
SODIUM	302	J								
THALLIUM	2.8	U								
VANADIUM	17.9									
ZINC	1090									
CYANIDE	9.4									

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

DATE: _____

SUBJECT: **Review of Data**
Received for Review on February 21, 2001

FROM: **Stephen L. Ostrodka, Chief (SMF-4J)**
Superfund Field Services Section

TO: **Data User:** Tetra Tech

We have reviewed the data for the following case:

Site name: Celotex Corp. (IL)

Case number: 28959 **SDG NUMBER:** ME0KS3

Number and Type of Samples: 1 water sample

Sample Numbers: ME0KS3

Laboratory: Compuchem **Hrs. for Review:** _____

Following are our findings:

CC: Cecilia Luckett
Region 5 TPO

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME0KS3
Laboratory: Compuchem

Mail Code: SM-5J

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

One water sample, numbered ME0KS3 were collected on 02/09/01. The lab received the samples on 02/14/01. The temperature for the sample were 6°C upon received. The sample was analyzed for metals using CLP SOW ILM04.0 analysis procedure.

Mercury analysis was performed using a Cold Vapor AA Technique. The remaining inorganic analyses were performed using an Inductively Coupled Plasma-Atomic Emission Spectrometric procedure.

Since sample ME0KS3 is the rinsate blank. No QC was analyzed for this dataset.

Reviewed by: Steffanie Tobin (IITRI/ESAT)
Date: March 13, 2001

Case Number: 28959
Site Name: Celotex Corp. (IL)

SDG Number: ME0KS3
Laboratory: Compuchem

1. HOLDING TIME:

HOLDING TIME CRITERIA

Inorganic

	-- Holding Time -- Primary	Expanded	------- pH ------- Primary	Expanded
Metals	180	0	2.0	0.0
Mercury	28	0	2.0	0.0
Cyanide	14	0	12.0	0.0

No problems were found for this qualification.

2. CALIBRATIONS:

CALIBRATION CRITERIA

Inorganic

Percent Recovery Limits

	--- Primary --- Low	High	-- Expanded --- Low	High
Cyanide	85.00	115.00	70.00	130.00
AA	90.00	110.00	75.00	125.00
ICP	90.00	110.00	75.00	125.00
Mercury	80.00	120.00	65.00	135.00

No problems were found for this qualification.

3. BLANKS:

LABORATORY BLANKS CRITERIA

The following inorganic samples are associated with a negative blank concentration whose absolute value is grea than the instrument detection limit (IDL). The sample concentration is greater than the IDL and less than five tim the absolute value of the blank concentration. Hits are qualified "J". Some non-detect concentration values are

sufficiently high that the detection limit may be elevated. These non-detects are qualified "UJ".

ME0KS3
Aluminum, Calcium, Copper, Sodium, Zinc

DC-284: The following inorganic samples are associated with a blank concentration which is greater than the instrument detection limit (IDL). The sample concentration is also greater than the IDL and less than five times tl blank concentration. Hits are qualified "J"; non-detects are not flagged.

ME0KS3
Aluminum, Magnesium, Manganese

4. MATRIX SPIKE/MATRIX SPIKE DUPLICATE AND LAB CONTROL SAMPLE:

Since sample ME0KS3 is the rinsate blank. No QC was analyzed for this dataset.

5. LABORATORY AND FIELD DUPLICATE

Since sample ME0KS3 is the rinsate blank. No QC was analyzed for this dataset.

6. ICP ANALYSIS

Since sample ME0KS3 is the rinsate blank. No QC was analyzed for this dataset.

7. GFAA ANALYSIS

NA

8. SAMPLE RESULTS

All data, except those qualified above, are acceptable.

Reviewed by: Steffanie Tobin (IITRI/ESAT)
Date: March 13, 2001

CADRE Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is an approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reporte quantitation limit is approximate and may or may not represent the action limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. (The compound may or may not be present)

Analytical Results (Qualified Data)

Case #: 28959 SDG : ME0KS3
Site : CELOTEX CORP.
Lab. : Compuchem
Reviewer : S. Tobin
Date : 03/13/01

Number of Soil Samples : 0
Number of Water Samples : 1

Sample Number :	ME0KS3									
Sampling Location :	EB-2									
Matrix :	Water									
Units :	ug/L									
Date Sampled :	2/9/01									
Time Sampled :	09:00									
%Solids :	0.0									
Dilution Factor :	1.0									
ANALYTE	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	15.3	J								
ANTIMONY	2.5	U								
ARSENIC	4.2	U								
BARIUM	1.3									
BERYLLIUM	0.10	U								
CADMIUM	0.60	U								
CALCIUM	17.6	UJ								
CHROMIUM	0.50	U								
COBALT	0.70	U								
COPPER	2.7	J								
IRON	14.2	U								
LEAD	1.7	U								
MAGNESIUM	21.4	J								
MANGANESE	0.64									
MERCURY	0.10	U								
NICKEL	1.3	U								
POTASSIUM	41.6	U								
SELENIUM	4.8									
SILVER	0.50	U								
SODIUM	152									
THALLIUM	6.2	U								
VANADIUM	0.70									
ZINC	1.1	UJ								
CYANIDE										

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
SUPERFUND DIVISION

APR 3 0 2001

DATE: _____

SUBJECT: Review of Data
Received for Review on March 30, 2001

FROM: Stephen L. Ostrodka, Chief (SMF-4J)
Superfund Field Services Section

for Steve Ostrodka
Richard L Nyhuis
4/26/01

TO: Data User: Tetra Tech

We have reviewed the data for the following case:

SITE NAME: Celotex Corp. (IL)

CASE NUMBER: 2001TC01 SDG NUMBER: 45826

Number and Type of Samples: 11 Soils

Sample Numbers: D01, S01 - S10

Laboratory: AATS - SWOK Hrs. for Review: _____

Following are our findings:

No data is usable and acceptable until the qualifications described in the attached narrative

Richard L Nyhuis

CC: Cecilia Moore
Region 5 TPO
Mail Code: SM-5J

Contractor: AATS - SWOK
Site: CELOTEX CORP (IL)

SAS: 2001TC01
SDG: 45826

Below is a summary of the out-of-control audits and the possible effect on the data for this case.

1. HOLDING TIME

Eleven soil samples; D01 and S01 through S10 were collected Feb 7 - 9, 2001 and shipped to Southwest Laboratory in Broken Arrow, OK. The lab received the samples on Feb 13, 2001 in good condition. The samples were extracted within the 30-day holding time and analyzed within the 45-day hold time for sample extracts; therefore, all results are acceptable.

2. WINDOW DEFINING MIX AND INSTRUMENT STABILITY

The window defining mix (WDM) was analyzed prior to the initial calibration to evaluate the descriptor switching times. All samples were analyzed within the twelve hour periods for instrument stability checks; therefore, the results are acceptable.

3. INITIAL CALIBRATION

The initial calibrations were run with a five point calibration. The RSD for these standards were within the QC limit of 35%; therefore, the results are acceptable.

4. CONTINUING CALIBRATION

The percent difference and the ion abundance ratio for the continuing calibration standard met the QC criteria; therefore, the results are acceptable.

5. METHOD BLANK

The three (3) method blanks were DFBLK1, DFBLK2 and DFBLK3. Both method blanks DFBLK1 and DFBLK3 were free of contamination. Method blank DFBLK2 contained OCDD at 1.774 ng/Kg. The presence of this contaminant in the samples associated with these blanks are flagged as undetected "U" when the sample results are less than ten (10) times the blank concentration. All concentrations in the affected samples were greater than 10x the blank concentration; therefore no qualifications were required. See Form IV PCDD for samples associated with each blank.

6. LCS, SPIKE AND DUPLICATE SAMPLES

QC sample LCS3 is the laboratory control sample. LCS3 reported all recoveries within the QC criteria of 50 - 150% recovery; therefore, the results are acceptable.

Reviewed by: Allison Harvey - IIT Research Institute
Date: April 17, 2001

Contractor: AATS - SWOK
Site: CELOTEX CORP (IL)

SAS: 2001TC01
SDG: 45826

Sample S01 was used for the matrix spike and matrix spike duplicate. All recoveries (50 - 150%) and RPDs (≤ 50) were within the QC criteria; therefore, the results are acceptable.

7. TOXICITY EQUIVALENCE SUMMARY AND ISOMER SPECIFICITY

The PCDD/PCDF Toxicity Equivalency Factors were properly calculated.

8. INTERNAL STANDARDS AND CLEANUP STANDARDS

The internal standard (labeled compounds) for all samples were within the QC limit; therefore, the results are acceptable.

The recovery of the cleanup standard was within the QC standards of 40 - 135%; therefore, the results are acceptable.

9. FIELD DUPLICATE

Sample D01 is a field duplicate of sample S06. The detected compounds are summarized in the table below:

PCDD/PCDF Compound	Sample S06 (ng/Kg)	Sample D01 (ng/Kg)
1,2,3,6,7,8-HxCDD	U	0.461
1,2,3,7,8,9-HxCDD	0.903	0.450
1,2,3,4,6,7,8-HpCDD	9.740	11.215
OCDD	135.469	204.652
1,2,3,7,8-PeCDF	U	0.278
2,3,4,7,8-PeCDF	U	0.187
1,2,3,6,7,8-HxCDF	1.793	1.698
1,2,3,4,6,7,8-HpCDF	12.706	9.031
OCDF	13.489	U

Results are not qualified based upon the results of the field blank or field duplicate.

Reviewed by: Allison Harvey - IIT Research Institute
Date: April 17, 2001

Contractor: AATS - SWOK
Site: CELOTEX CORP (IL)

SAS: 2001TC01
SDG: 45826

10. ANALYTICAL SEQUENCE

All samples were analyzed within holding times.

2,3,7,8-TCDD and/or 2,3,7,8-TCDF were detected in samples S09 and S10 and the concentrations were qualified with either the "X" (EMPC) flag or "C" (use value from second column analysis) flag; however no raw data for the confirmation column was submitted in the data package. The use of the "C" flag implies that the second column confirmation was conducted, but no raw data was submitted. Per the USEPA CLP National Functional Guidelines for Chlorinated Dioxin/Furan Data Validation - "Second column confirmation is required for any sample analyzed on a DB-5 (or equivalent) column in which 2,3,7,8-TCDD or 2,3,7,8-TCDF is reported, or in which either 2,3,7,8-TCDD or 2,3,7,8-TCDF is reported as ana EMPC, regardless of the total TEF-adjusted concentration calculated for the samples on 1DFB (Form I-HR CDD-2)." If we accept that the confirmation data exists, without the raw data the reviewer is unable to verify that the second column passed all calibration criteria, linearity specifications, etc; therefore, the results for 2,3,7,8-TCDD and 2,3,7,8-TCDF in samples S09 and S10 are qualified as estimated "J".

11. TARGET COMPOUND IDENTIFICATION AND QUANTITATION

The results for the samples in this case were properly identified and quantitated.

12. ADDITIONAL INFORMATION

The standard calibration range for OCDD according to SW-846 Method 8290 (p 8290-59 Table 5) is 5 pg/µL to 1,000 pg/µL. The laboratory reported 1736.879 ng/Kg in sample S02 and 9210.704 ng/Kg in sample S09. Both concentrations exceeded the calibration range and should have been diluted and re-analyzed; therefore these concentrations are considered estimated "J".

Reviewed by: Allison Harvey - IIT Research Institute
Date: April 17, 2001

CALIBRATION OUTLIERS
CDD/CDF TCL COMPOUNDS
Page 1 of 2

CASE/SAS #: 2001 TC01				CONTRACT LAB: AATS - SWOK				SDG: 45826							
Instrument: AutoSpec				SITE NAME:											
Column: DB - 5				Initial Calibration				Continuing Calibration				Continuing Calibration			
Date/Time:				2-16-01 00:33				2-16-01 10:17							
TC L Analytes	Selected Ion Ratio		QC Limits	Mean RRF	RSD	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q
2378-TCDD	320/322		0.65-0.89												
2378-TCDF	304/306		0.65-0.89												
12378-PeCDF	340/342		1.32-1.78												
12378-PeCDD	356/358		1.32-1.78												
23478-PeCDF	340/342		1.32-1.78												
123478-HxCDF	374/376		1.05-1.43												
123678-HxCDF	374/376		1.05-1.43												
123478-HxCDD	390/392		1.05-1.43												
123678-HxCDD	390/392		1.05-1.43												
123789-HxCDD	390/392		1.05-1.43												
234678-HxCDF	374/376		1.05-1.43												
123789-HxCDF	374/376		1.05-1.43												
1234678-HpCDF	408/410		0.88-1.20												
1234678-HpCDD	424/426		0.88-1.20												
1234789-HpCDF	408/410		0.88-1.20												
OCDD	458/460		0.76-1.02												
OCDF	442/444		0.76-1.02												

AFFECTED SAMPLES:

DFBLK1
SO1 - SO5
SO1MS | MSD

Reviewer's Init/Date ACH / 4-16-01

CALIBRATION OUTLIERS
CDD/CDF TCL COMPOUNDS
Page 2 of 2

CASE\SAS #: 2001 TC01				CONTRACT LAB: AATS - SWOK								SDG: 45826							
Instrument: AutoSpec				SITE NAME:															
Column: DB-5				Initial Calibration				Continuing Calibration				Continuing Calibration				Continuing Calibration			
Date/Time:				2-16-01 00:33				2-16-01 10:17											
TC L_Analytes	Selected Ion Ratio		QC Limits	Mean RRF	RSD	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q
LABELED COMPOUNDS																			
13C-2378-TCDD	332/334		0.65-0.89																
13C-12378-PeCDD	368/370		1.32-1.78																
13C-123478-HxCDD	402/404		1.05-1.43																
13C-123678-HxCDD	402/404		1.05-1.43																
13C-1234678-HpCDD	436/438		0.88-1.20																
13C-OCDD	470/472		0.76-1.02																
13C-2378-TCDF	316/318		0.65-0.89																
13C-12378-PeCDF	352/354		1.32-1.78																
13C-23478-PeCDF	352/354		1.32-1.78																
13C-123478-HxCDF	384/386		0.43-0.59																
13C-123678-HxCDF	384/386		0.43-0.59																
13C-123789-HxCDF	384/386		0.43-0.59																
13C-234678-HxCDF	384/386		0.43-0.59																
13C-1234678-HpCDF	418/420		0.37-0.51																
13C-1234789-HpCDF	418/420		0.37-0.51																
INTERNAL STANDARDS																			
13C-1234-TCDD	332/334		0.65-0.89																
13C-123789-HxCDD	402/404		1.05-1.43																

Per National Functional Guidelines (Chlorinated Dioxin/Furan) 9/00 : RRFs %RSD ≤ 35%, %D ± 35%, Ion ratios ± 15%

RRs %RSD ≤ 20% %D ± 20%,

Reviewer's Initials/Date: ACH / 4-16-01

Q = These flags should be applied to the analytes on the sample data sheets.

CASE\SAS #: 2001TC01				CONTRACT LAB: AATS - SWOK				SDG: 45926							
Instrument: AutoSpec				SITE NAME:											
Column: DB-5				Initial Calibration				Continuing Calibration				Continuing Calibration				Continuing Calibration			
Date/Time:				2-26-01 14 46				3-08-01 23:05				3-09-01 15 25							
TC L Analytes	Selected Ion Ratio		QC Limits	Mean RRF	RSD	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q
2378-TCDD	320/322		0.65-0.89																
2378-TCDF	304/306		0.65-0.89																
12378-PeCDF	340/342		1.32-1.78																
12378-PeCDD	356/358		1.32-1.78																
23478-PeCDF	340/342		1.32-1.78																
123478-HxCDF	374/376		1.05-1.43																
123678-HxCDF	374/376		1.05-1.43																
123478-HxCDD	390/392		1.05-1.43																
123678-HxCDD	390/392		1.05-1.43																
123789-HxCDD	390/392		1.05-1.43																
234678-HxCDF	374/376		1.05-1.43																
123789-HxCDF	374/376		1.05-1.43																
1234678-HpCDF	408/410		0.88-1.20																
1234678-HpCDD	424/426		0.88-1.20																
~~1234789-HpCDF~~	~~408/410~~		~~0.88-1.20~~																
OCDD	458/460		0.76-1.02																
OCDF	442/444		0.76-1.02																
AFFECTED SAMPLES:								DFBLK				LCS3 1.0H 3 13 01							
								DF BLK2				DF BLK3							
								DF BLK				DO1							
								SO6 - S10											
Reviewer's Init/Date ACH / 4-16-01																			

CASE\SAS #: 2001TC01				CONTRACT LAB: AATS - SWOK				SDG: 45826											
Instrument: AutoSpec				SITE NAME:															
Column: DB-5				Initial Calibration				Continuing Calibration				Continuing Calibration				Continuing Calibration			
Date/Time:				2-26-01 14:46				3-08-01 23:05											
TC L Analytes	Selected Ion Ratio		QC Limits	Mean RRF	RSD	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q	RRF	%D	Ion Ratio	Q
LABELED COMPOUNDS																			
13C-2378-TCDD	332/334		0.65-0.89																
13C-12378-PeCDD	368/370		1.32-1.78																
13C-123478-HxCDD	402/404		1.05-1.43																
13C-123678-HxCDD	402/404		1.05-1.43																
13C-1234678-HpCDD	436/438		0.88-1.20																
13C-OCDD	470/472		0.76-1.02																
13C-2378-TCDF	316/318		0.65-0.89																
13C-12378-PeCDF	352/354		1.32-1.78																
13C-23478-PeCDF	352/354		1.32-1.78																
13C-123478-HxCDF	384/386		0.43-0.59																
13C-123678-HxCDF	384/386		0.43-0.59																
13C-123789-HxCDF	384/386		0.43-0.59																
13C-234678-HxCDF	384/386		0.43-0.59																
13C-1234678-HpCDF	418/420		0.37-0.51																
13C-1234789-HpCDF	418/420		0.37-0.51																
INTERNAL STANDARDS																			
13C-1234-TCDD	332/334		0.65-0.89																
13C-123789-HxCDD	402/404		1.05-1.43																

Per National Functional Guidelines (Chlorinated Dioxin/Furan) 9/00 : RRFs %RSD ≤ 35%, %D ± 35%, ion ratios ± 15%

RRs %RSD ≤ 20% %D ± 20%,

Reviewer's Initials/Date: ACA 14-16-01

Q = These flags should be applied to the analytes on the sample data sheets.

Office of Enforcement

F N 5
230 South . . rborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

PROJ. NO. 20201TC01 | PROJECT NAME

SAMPLERS (Signature)

3.1°C

STA. NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	PCB/PCDF	Tag No.	Matrix
SD1	2/9/01	1230	X		Sed-1 (MS/MSD)	1	X	5-124901	Sediment
SD2	2/9/01	1530	X		Sed-2	1	X	5-124902	
SD3	2/8/01	0950	X		Sed-3	1	X	5-124904	
SD4	2/9/01	0845	X		Sed-4	1	X	5-124900	
SD5	2/9/01	1230	X		Sed-5	1	X	5-124899	
SD6	2/8/01	1430	X		Sed-6	1	X	5-124898	
SD7	2/8/01	1615	X		Sed-7	1	X	5-124897	
SD8	2/9/01	1620	X		Sed-8	1	X	5-124896	
SD9	2/9/01	1100	X		Sed-9	1	X	5-124895	
DD1	2/8/01	1430	X		Sed-6D	1	X	5-124905	
SW1	2/7/01	1225	X		~~Sed~~ ZC WST-1	1	X	5-124920	

Send To: Southwest Laboratory of Oklahoma, Inc
1700 West Albany
Broken Arrow, OK 74012-1421
ATTN: Jayant Shringarpure

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
	2/12/01 1915				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
			2-13 01 8:20	Fed Ex Air Bill No: 825391627159 COC Seal Nos: 86201 86202	

Distribution White — Accompanies Shipment, Pink — Coordinator Field Files, Yellow — Laboratory File

ω

SOUTHWEST LABORATORY OF OKLAHOMA
1700 West Albany, Suite A / Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE
March 29, 2001

CLIENT:	USEPA5
EPISODE NO.:	45826
SAMPLE NO.:	45826.01 Thru 45826.13
SDG NO.:	45826

Samples were extracted and analyzed per method 8290.

Broad peaks were observed for HPCDD,OCDD and OCDF indicating chromatography problems. Replacing the columns twice showed some behavior. Indicating matrix related problems. 13C-OCDD was not detected in sample 45826.12 due to shifting of the retention time which was related to sample matrix.

Jayant Shringarpure, Ph.D.
Technical Director
em

March 29, 2001

AATS/SWOK

PCDD/PCDF SPIKED SAMPLE SUMMARY

EPA SAMPLE NO.

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Contract: LCS B

Client: Case No: LAB. ID.: LC0214SA SDG No.:

Matrix: solid (aqueous/solid/leachate)

CONCENTRATION UNITS: (pg/L or ng/Kg) ng/Kg

ANALYTE	SPIKE ADDED (PG)	SPIKED SAMPLE CONCEN.	SAMPLE CONCEN.	% REC #	QC LIMITS
2378-TCDD	200	11.122	0.000	83.4	50-150
12378-PeCDD	500	27.978	0.000	83.9	50-150
123478-HxCDD	500	19.233	0.000	57.7	50-150
123678-HxCDD	500	30.248	0.000	90.7	50-150
123789-HxCDD	500	27.824	0.000	83.5	50-150
1234678-HpCDD	500	24.216	0.000	72.6	50-150
OCDD	1000	54.432	0.000	81.6	50-150
2378-TCDF	200	9.677	0.000	72.6	50-150
12378-PeCDF	500	24.656	0.000	74.0	50-150
23478-PeCDF	500	27.183	0.000	81.5	50-150
123478-HxCDF	500	20.597	0.000	61.8	50-150
123678-HxCDF	500	28.082	0.000	84.2	50-150
123789-HxCDF	500	26.312	0.000	78.9	50-150
234678-HxCDF	500	25.363	0.000	76.1	50-150
1234678-HpCDF	500	25.273	0.000	75.8	50-150
1234789-HpCDF	500	21.619	0.000	64.9	50-150
OCDF	1000	42.305	0.000	63.5	50-150

AATS/SWOK

PCDD/PCDF SPIKED SAMPLE SUMMARY

EPA SAMPLE NO.

Lab Name:	SOUTHWEST LAB. OF OKLAHOMA		Contract:		S01	
Client:	USEPA5	Case No:	SAS No.:		SDG No.:	45826
Matrix:	solid	(aqueous/solid/leachate) Sample Wt/Vol:	15.56	(g/ml)	% Moist.	31.93

CONCENTRATION UNITS: (pg/L or ng/Kg) ng/Kg

ANALYTE	SPIKE ADDED (PG)	SPIKE ADDED CONCENT	SPIKED SAMPLE CONCENT	SAMPLE CONCENTRAT.	% REC	#	QC LIMITS
2378-TCDD	200	18.88	21.42	"NotFnd"	113.4		50-150
12378-PeCDD	500	47.21	47.57	"NotFnd"	100.8		50-150
123478-HxCDD	500	47.21	56.70	"NotFnd"	120.1		50-150
123678-HxCDD	500	47.21	44.26	"NotFnd"	93.8		50-150
123789-HxCDD	500	47.21	48.48	"NotFnd"	102.7		50-150
1234678-HpCDD	500	47.21	51.74	10.009	88.4		50-150
OCDD	1000	94.41	158.72	108.271	53.4		50-150
2378-TCDF	200	18.88	17.41	"NotFnd"	92.2		50-150
12378-PeCDF	500	47.21	42.39	"NotFnd"	89.8		50-150
23478-PeCDF	500	47.21	37.70	"NotFnd"	79.9		50-150
123478-HxCDF	500	47.21	45.72	"NotFnd"	96.9		50-150
123678-HxCDF	500	47.21	41.06	0.635	85.6		50-150
123789-HxCDF	500	47.21	44.32	"NotFnd"	93.9		50-150
234678-HxCDF	500	47.21	41.78	"NotFnd"	88.5		50-150
1234678-HpCDF	500	47.21	43.72	2.277	87.8		50-150
1234789-HpCDF	500	47.21	43.60	"NotFnd"	92.4		50-150
OCDF	1000	94.41	88.01	5.374	87.5		50-150

AATS/SWOK

PCDD/PCDF DUPLICATE SAMPLE SUMMARY

EPA SAMPLE NO.

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Contract: S01

Client USEPA5 Case No: 0 SAS No.: 0 SDG No.: 45826

Matrix: solid (Soil/Water/Waste/Ash)

CONCENTRATION UNITS:(pg/L or ng/Kg) ng/Kg

ANALYTE	MS SAMP. CONCENT.	MSD SAMPLE CONCENT.	MSD SAMPLE % REC	RPD #	QC LIMITS
2378-TCDD	21.42	22.030	116.7	2.83	50
12378-PeCDD	47.57	56.485	119.7	17.14	50
123478-HxCDD	56.70	51.842	109.8	8.95	50
123678-HxCDD	44.26	50.476	106.9	13.12	50
123789-HxCDD	48.48	49.732	105.3	2.56	50
1234678-HpCDD	51.74	55.198	95.7	7.96	50
OCDD	158.72	156.783	51.4	3.91	50
2378-TCDF	17.41	18.187	96.3	4.35	50
12378-PeCDF	42.39	45.905	97.2	7.95	50
23478-PeCDF	37.70	41.381	87.7	9.30	50
123478-HxCDF	45.72	46.952	99.5	2.65	50
123678-HxCDF	41.06	45.091	94.2	9.51	50
123789-HxCDF	44.32	45.736	96.9	3.15	50
234678-HxCDF	41.78	45.059	95.5	7.54	50
1234678-HpCDF	43.72	44.812	90.1	2.60	50
1234789-HpCDF	43.60	40.456	85.7	7.49	50
OCDF	88.01	94.788	94.7	7.88	50

If an analyte is not detected in either analysis, enter 0 (zero) as the concentration.

Column to be used to flag values outside QC limits.

QC limits are advisory.

4DF

PCDD/PCDF METHOD BLANK SUMMARY

EPA SAMPLE NO
S3/29/

DFBLK 31

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA Contract: _____

Lab Code: SWOK Case No.: USEPAS SAS No.: _____ SDG No.: S01

Matrix: Soil (Soil/Water/Waste/Ash) Lab Sample ID: BL02148A

Sample wt/vol: 15 (g/mL) g Lab File ID: A0063#2

Water Sample Prep.: _____ (Sepf/Cont) Date Extracted: 2/14/01

Date Analyzed: 2/16/01

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, SPIKES, AND DUPLICATES:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
S01	45826.01	A0063#3	2/16/01
S01MS	45826.03MS	A0063#4	
S01MSD	45826.03MSD	A0063#5	
S02	45826.04	A0063#7	
S03	45826.05	A0063#8	
S04	45826.06	A0063#10	
S05	45826.07	A0063#11	

4DF

PCDD/PCDF METHOD BLANK SUMMARY

EPA SAMPLE NC

DFBLK2

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA Contract: _____

Lab Code: SWOK Case No.: USEPA5 SAS No.: _____ SDG No.: S01

Matrix: Soil (Soil/Water/Waste/Ash) Lab Sample ID: BBC2145H

Sample wt/vol: 15 (g/mL) g Lab File ID: H0145#3

Water Sample Prep.: _____ (Sepf/Cont) Date Extracted: 2/14/01

Date Analyzed: 1/9/01

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, SPIKES, AND DUPLICATES:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
S06	458260 8	A0145#5	3/9/01
S07	45826.09	H0145#6	
S08	45826.10	A0145#7	
S09	45826.11	H0145#8	
S10	45826.12	H0145#9	

4DF

PCDD/PCDF METHOD BLANK SUMMARY

4 3/27/01

EPA SAMPLE NO.

DFBLK 3

Lab Name: SOUTHWEST LABORATORY OF OKLAHOMA Contract: _____

Lab Code: SWOK Case No.: USEPA5 SAS No.: _____ SDG No.: 301

Matrix: Soil (Soil/Water/Waste/Ash) Lab Sample ID: BB02145A

Sample wt/vol: 15 (g/mL) g Lab File ID: A0149#4

Water Sample Prep.: _____ (Sepf/Cont) Date Extracted: 2/14/01

Date Analyzed: 3/9/01

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, SPIKES, AND DUPLICATES:

EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
001	45826.03	A0149#5	3/9/01
LCS3	LC02145A	A0149#3	3/9/01

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
DFBLK 31 ST 3/24/01

Lab Name: Southwest Lab. of Oklahoma Episode No.:

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: BL0214SA

Client Name: Sample Wt/Vol: 15.00 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #2

Analysis Date: 16-FEB-01 Time: 12:25:23 Blank Data Filename:

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND		DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*		0.247	U	*	*	1.14
1,2,3,7,8-PeCDD	*		0.348	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*		0.430	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*		0.311	U	*	*	1.21
1,2,3,7,8,9-HxCDD	*		0.342	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	*		0.544	U	*	*	1.18
OCDD	*		1.222	U	*	*	1.27
2,3,7,8-TCDF	*		0.167	U	*	*	1.20
1,2,3,7,8-PeCDF	*		0.245	U	*	*	1.02
2,3,4,7,8-PeCDF	*		0.232	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*		0.162	U	*	*	1.20
1,2,3,6,7,8-HxCDF	*		0.141	U	*	*	1.38
1,2,3,7,8,9-HxCDF	*		0.198	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*		0.156	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	*		0.286	U	*	*	1.51
1,2,3,4,7,8,9-HpCDF	*		0.392	U	*	*	1.10
OCDF	*		1.559	U	*	*	1.61
Total Tetra-Dioxins	*		0.247	U			
Total Penta-Dioxins	*		0.348	U			
Total Hexa-Dioxins	*		0.311	U			
Total Hepta-Dioxins	*		0.544	U			
Total Tetra-Furans	*		0.167	U			
Total Penta-Furans	*		0.232	U			
Total Hexa-Furans	*		0.141	U			
Total Hepta-Furans	*		0.286	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

DFBLK 3T 3/29/01

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA — Episode No.:

Client Name: — Lab Sample ID: BL0214SA

Matrix (aqueous/solid/leachate): solid — Sample Wt/Vol: 15.00 g or mL: g

Sample Receipt Date: — Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: — Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 12:25:23 — GC Column ID: DB-5

Extract Volume(ul): 20.0 — Sample Data Filename: A0063 #2

Injection Volume(ul): 2.00 — Blank Data Filename:

Dilution Factor: 1 — Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	*	X 0.001	*
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 0.000e+00

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
DFBLK 2

Lab Name: Southwest Lab. of Oklahoma Episode No.:

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: BB0214SA

Client Name: Sample Wt/Vol: 15.00 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #3

Analysis Date: 9-MAR-01 Time: 03:06:14 Blank Data Filename:

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.044	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.066	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.081	U	*	*	0.83
1,2,3,6,7,8-HxCDD	*	0.057	U	*	*	1.18
1,2,3,7,8,9-HxCDD	*	0.055	U	*	*	1.23
1,2,3,4,6,7,8-HpCDD	*	0.068	U	*	*	1.24
OCDD	1.774	0.129		0.94	1.000	1.20
2,3,7,8-TCDF	*	0.039	U	*	*	1.18
1,2,3,7,8-PeCDF	*	0.045	U	*	*	1.08
2,3,4,7,8-PeCDF	*	0.046	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.032	U	*	*	1.36
1,2,3,6,7,8-HxCDF	*	0.029	U	*	*	1.45
1,2,3,7,8,9-HxCDF	*	0.040	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	0.033	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	*	0.057	U	*	*	1.70
1,2,3,4,7,8,9-HpCDF	*	0.087	U	*	*	1.13
OCDF	*	0.123	U	*	*	1.49
Total Tetra-Dioxins	*	0.044	U			
Total Penta-Dioxins	*	0.066	U			
Total Hexa-Dioxins	*	0.057	U			
Total Hepta-Dioxins	*	0.068	U			
Total Tetra-Furans	*	0.039	U			
Total Penta-Furans	*	0.046	U			
Total Hexa-Furans	*	0.029	U			
Total Hepta-Furans	*	0.057	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

DFBLK 2

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA — Episode No.:

Client Name: — Lab Sample ID: BB0214SA

Matrix (aqueous/solid/leachate): solid — Sample Wt/Vol: 15.00 g or mL: g

Sample Receipt Date: — Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: — Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 03:06:14 — GC Column ID: DB-5

Extract Volume(ul): 20.0 — Sample Data Filename: A0145 #3

Injection Volume(ul): 2.00 — Blank Data Filename:

Dilution Factor: 1 — Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	1.77	X 0.001	1.77e-03
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 1.774e-03

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
DFBLK 3

Lab Name: Southwest Lab. of Oklahoma Episode No.:

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: BB0214SA

Client Name: USEPA5 Sample Wt/Vol: 15.00 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: A0149 #4

Analysis Date: 9-MAR-01 Time: 17:02:42 Blank Data Filename: A0149#4

Dilution Factor: 1 Cal. Ver. Data Filename: A0149#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.080	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.105	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.192	U	*	*	0.83
1,2,3,6,7,8-HxCDD	*	0.135	U	*	*	1.18
1,2,3,7,8,9-HxCDD	*	0.130	U	*	*	1.23
1,2,3,4,6,7,8-HpCDD	*	0.157	U	*	*	1.24
OCDD	*	0.857	U	*	*	1.20
2,3,7,8-TCDF	*	0.077	U	*	*	1.18
1,2,3,7,8-PeCDF	*	0.064	U	*	*	1.08
2,3,4,7,8-PeCDF	*	0.065	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.063	U	*	*	1.36
1,2,3,6,7,8-HxCDF	*	0.059	U	*	*	1.45
1,2,3,7,8,9-HxCDF	*	0.081	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	0.066	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	*	0.164	U	*	*	1.70
1,2,3,4,7,8,9-HpCDF	*	0.248	U	*	*	1.13
OCDF	*	0.730	U	*	*	1.49
Total Tetra-Dioxins	*	0.080	U			
Total Penta-Dioxins	*	0.105	U			
Total Hexa-Dioxins	*	0.135	U			
Total Hepta-Dioxins	*	0.157	U			
Total Tetra-Furans	*	0.077	U			
Total Penta-Furans	*	0.065	U			
Total Hexa-Furans	*	0.059	U			
Total Hepta-Furans	*	0.164	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.
DFBLK3

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.:

Client Name: USEPA5 Lab Sample ID: BB0214SA

Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 15.00 g or mL: g

Sample Receipt Date: Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 17:02:42 GC Column ID: DB-5

Extract Volume(ul): 20.0 Sample Data Filename: A0149 #4

Injection Volume(ul): 2.00 Blank Data Filename: A0149#4

Dilution Factor: 1 Cal. Ver. Data Filename: A0149#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	*	X 0.01	*
OCDD	*	X 0.001	*
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 0.000e+00

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S01

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.01

Client Name: USEPA5 Sample Wt/Vol: 15.56 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #3

Analysis Date: 16-FEB-01 Time: 13:14:02 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 31.93

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.369	U	*	*	1.14
1,2,3,7,8-PeCDD	*	0.595	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*	0.710	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.514	U	*	*	1.21
1,2,3,7,8,9-HxCDD	*	0.564	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	10.009	0.793		0.92	1.001	1.18
OCDD	108.271	2.025		0.90	1.000	1.27
2,3,7,8-TCDF	*	0.233	U	*	*	1.20
1,2,3,7,8-PeCDF	*	0.300	U	*	*	1.02
2,3,4,7,8-PeCDF	*	0.285	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.428	U	*	*	1.20
1,2,3,6,7,8-HxCDF	0.635	0.372	I	1.38	1.002	1.38
1,2,3,7,8,9-HxCDF	*	0.522	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*	0.410	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	2.277	0.505	X	1.23	1.001	1.51
1,2,3,4,7,8,9-HpCDF	*	0.692	U	*	*	1.10
OCDF	5.374	1.298		0.91	1.000	1.61
Total Tetra-Dioxins	*	0.369	U			
Total Penta-Dioxins	*	0.595	U			
Total Hexa-Dioxins	*	0.514	U			
Total Hepta-Dioxins	*	0.793	U			
Total Tetra-Furans	0.716	0.233				
Total Penta-Furans	0.956	0.285				
Total Hexa-Furans	1.916	0.372				
Total Hepta-Furans	*	0.505	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

S01

Lab Name: SOUTHWEST LAB. OF OKLAHOMA | Episode No.: 45826

Client Name: USEPAS | Lab Sample ID: 45826.01

Matrix (aqueous/solid/leachate): solid | Sample Wt/Vol: 15.56 g or mL: g

Sample Receipt Date: 02-13-01 | Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: | Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 13:14:02 | GC Column ID: DB-5

Extract Volume(ul): 20.0 | Sample Data Filename: A0063 #3

Injection Volume(ul): 2.00 | Blank Data Filename: A0063 #2

Dilution Factor: 1 | Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 31.93

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	10.01	X 0.01	1.00e-01
OCDD	108.27	X 0.001	1.08e-01
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	0.64	X 0.1	6.35e-02
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	2.28	X 0.01	2.28e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	5.37	X 0.001	5.37e-03
		Total:	3.000e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S02

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.04

Client Name: USEPA5 Sample Wt/Vol: 15.26 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #7

Analysis Date: 16-FEB-01 Time: 16:28:39 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 43.76

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.646	U	*	*	1.14
1,2,3,7,8-PeCDD	*	0.727	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*	1.269	U	*	*	0.87
1,2,3,6,7,8-HxCDD	1.741	0.918	X	2.20	1.001	1.21
1,2,3,7,8,9-HxCDD	*	1.008	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	154.800	0.983		1.04	1.001	1.18
OCDD	1736.879	3.410	E	0.91	1.000	1.27
2,3,7,8-TCDF	*	0.504	U	*	*	1.20
1,2,3,7,8-PeCDF	*	0.392	U	*	*	1.02
2,3,4,7,8-PeCDF	*	0.372	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.616	U	*	*	1.20
1,2,3,6,7,8-HxCDF	1.694	0.536	I	1.28	1.003	1.38
1,2,3,7,8,9-HxCDF	*	0.753	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*	0.591	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	11.391	1.020		1.07	1.000	1.51
1,2,3,4,7,8,9-HpCDF	*	1.398	U	*	*	1.10
OCDF	21.591	5.536		0.88	1.002	1.61
Total Tetra-Dioxins	*	0.646	U			
Total Penta-Dioxins	*	0.727	U			
Total Hexa-Dioxins	*	0.918	U			
Total Hepta-Dioxins	*	0.983	U			
Total Tetra-Furans	2.524	0.504				
Total Penta-Furans	*	0.372	U			
Total Hexa-Furans	8.940	0.536				
Total Hepta-Furans	48.142	1.020				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

4-17-01

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.
S02

Lab Name: SOUTHWEST LAB. OF OKLAHOMA | Episode No.: 45826

Client Name: USEPA5 | Lab Sample ID: 45826.04

Matrix (aqueous/solid/leachate): solid | Sample Wt/Vol: 15.26 g or mL: g

Sample Receipt Date: 02-13-01 | Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: | Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 16:28:39 | GC Column ID: DB-5

Extract Volume(ul): 20.0 | Sample Data Filename: A0063 #7

Injection Volume(ul): 2.00 | Blank Data Filename: A0063 #2

Dilution Factor: 1 | Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 43.76

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	1.74	X 0.1	1.74e-01
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	154.80	X 0.01	1.55e+00
OCDD	1736.88	X 0.001	1.74e+00
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	1.69	X 0.1	1.69e-01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	11.39	X 0.01	1.14e-01
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	21.59	X 0.001	2.16e-02
		Total:	3.764e+00

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S03

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.05

Client Name: USEPA5 Sample Wt/Vol: 15.19 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #9

Analysis Date: 16-FEB-01 Time: 18:05:58 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 26.92

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.178	U	*	*	1.14
1,2,3,7,8-PeCDD	*	0.443	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*	0.512	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.370	U	*	*	1.21
1,2,3,7,8,9-HxCDD	*	0.407	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	2.807	1.053		1.06	1.001	1.18
OCDD	50.649	1.576		0.90	0.999	1.27
2,3,7,8-TCDF	*	0.157	U	*	*	1.20
1,2,3,7,8-PeCDF	*	0.222	U	*	*	1.02
2,3,4,7,8-PeCDF	*	0.210	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.142	U	*	*	1.20
1,2,3,6,7,8-HxCDF	*	0.124	U	*	*	1.38
1,2,3,7,8,9-HxCDF	*	0.174	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*	0.136	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	*	1.280	U	*	*	1.51
1,2,3,4,7,8,9-HpCDF	*	1.755	U	*	*	1.10
OCDF	*	2.070	U	*	*	1.61
Total Tetra-Dioxins	*	0.178	U			
Total Penta-Dioxins	*	0.443	U			
Total Hexa-Dioxins	*	0.370	U			
Total Hepta-Dioxins	*	1.053	U			
Total Tetra-Furans	*	0.157	U			
Total Penta-Furans	*	0.210	U			
Total Hexa-Furans	0.478	0.124				
Total Hepta-Furans	*	1.280	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

S03

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 45826

Client Name: USEPA5 Lab Sample ID: 45826.05

Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 15.19 g or mL: g

Sample Receipt Date: 02-13-01 Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 18:05:58 GC Column ID: DB-5

Extract Volume(ul): 20.0 Sample Data Filename: A0063 #9

Injection Volume(ul): 2.00 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 26.92

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	2.81	X 0.01	2.81e-02
OCDD	50.65	X 0.001	5.06e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 7.872e-02

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S04

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.06

Client Name: USEPA5 Sample Wt/Vol: 15.05 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #10

Analysis Date: 16-FEB-01 Time: 18:54:38 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 25.66

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.295	U	*	*	1.14
1,2,3,7,8-PeCDD	*	0.388	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*	0.773	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.559	U	*	*	1.21
1,2,3,7,8,9-HxCDD	*	0.614	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	29.265	1.028		1.01	1.001	1.18
OCDD	254.420	1.756		0.91	1.001	1.27
2,3,7,8-TCDF	*	0.235	U	*	*	1.20
1,2,3,7,8-PeCDF	*	0.249	U	*	*	1.02
2,3,4,7,8-PeCDF	*	0.236	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.506	U	*	*	1.20
1,2,3,6,7,8-HxCDF	1.300	0.440	X	1.94	1.003	1.38
1,2,3,7,8,9-HxCDF	*	0.618	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*	0.485	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	7.473	1.215		1.07	1.000	1.51
1,2,3,4,7,8,9-HpCDF	*	1.665	U	*	*	1.10
OCDF	15.363	2.338		0.99	1.003	1.61
Total Tetra-Dioxins	*	0.295	U			
Total Penta-Dioxins	*	0.388	U			
Total Hexa-Dioxins	4.127	0.559				
Total Hepta-Dioxins	*	1.028	U			
Total Tetra-Furans	1.594	0.235				
Total Penta-Furans	3.786	0.236				
Total Hexa-Furans	6.890	0.440				
Total Hepta-Furans	7.473	1.215				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.
S04

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 45826

Client Name: USEPA5 Lab Sample ID: 45826.06

Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 15.05 g or mL: g

Sample Receipt Date: 02-13-01 Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 18:54:38 GC Column ID: DB-5

Extract Volume(ul): 20.0 Sample Data Filename: A0063 #10

Injection Volume(ul): 2.00 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 25.66

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	29.27	X 0.01	2.93e-01
OCDD	254.42	X 0.001	2.54e-01
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	1.30	X 0.1	1.30e-01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	7.47	X 0.01	7.47e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	15.36	X 0.001	1.54e-02

Total: 7.672e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S05

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.07

Client Name: USEPA5 Sample Wt/Vol: 15.05 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-16-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0063 #11

Analysis Date: 16-FEB-01 Time: 19:43:18 Blank Data Filename: A0063 #2

Dilution Factor: 1 Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 24.29

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.204	U	*	*	1.14
1,2,3,7,8-PeCDD	*	0.317	U	*	*	1.13
1,2,3,4,7,8-HxCDD	*	0.472	U	*	*	0.87
1,2,3,6,7,8-HxCDD	*	0.341	U	*	*	1.21
1,2,3,7,8,9-HxCDD	*	0.375	U	*	*	1.10
1,2,3,4,6,7,8-HpCDD	3.018	0.921		0.96	1.000	1.18
OCDD	48.264	1.670		0.98	1.000	1.27
2,3,7,8-TCDF	*	0.150	U	*	*	1.20
1,2,3,7,8-PeCDF	*	0.271	U	*	*	1.02
2,3,4,7,8-PeCDF	*	0.257	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.298	U	*	*	1.20
1,2,3,6,7,8-HxCDF	*	0.259	U	*	*	1.38
1,2,3,7,8,9-HxCDF	*	0.364	U	*	*	0.98
2,3,4,6,7,8-HxCDF	*	0.286	U	*	*	1.25
1,2,3,4,6,7,8-HpCDF	*	0.506	U	*	*	1.51
1,2,3,4,7,8,9-HpCDF	*	0.694	U	*	*	1.10
OCDF	*	1.134	U	*	*	1.61
Total Tetra-Dioxins	*	0.204	U			
Total Penta-Dioxins	*	0.317	U			
Total Hexa-Dioxins	*	0.341	U			
Total Hepta-Dioxins	*	0.921	U			
Total Tetra-Furans	*	0.150	U			
Total Penta-Furans	*	0.257	U			
Total Hexa-Furans	*	0.259	U			
Total Hepta-Furans	*	0.506	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

EPA SAMPLE NO.
S05

Lab Name: SOUTHWEST LAB. OF OKLAHOMA | Episode No.: 45826

Client Name: USEPA5 | Lab Sample ID: 45826.07

Matrix (aqueous/solid/leachate): solid | Sample Wt/Vol: 15.05 g or mL: g

Sample Receipt Date: 02-13-01 | Initial Calibration Date: 02-16-01

Ext. Date: 02-14-01 Shift: | Instrument ID: AutoSpec

Analysis Date: 16-FEB-01 Time: 19:43:18 | GC Column ID: DB-5

Extract Volume(ul): 20.0 | Sample Data Filename: A0063 #11

Injection Volume(ul): 2.00 | Blank Data Filename: A0063 #2

Dilution Factor: 1 | Cal. Ver. Data Filename: A0061 #13

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 24.29

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	3.02	X 0.01	3.02e-02
OCDD	48.26	X 0.001	4.83e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	*	X 0.1	*
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	*	X 0.01	*
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 7.844e-02

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S06

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.08

Client Name: USEPA5 Sample Wt/Vol: 15.20 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #5

Analysis Date: 9-MAR-01 Time: 04:43:38 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.084	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.173	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.255	U	*	*	0.83
1,2,3,6,7,8-HxCDD	*	0.179	U	*	*	1.18
1,2,3,7,8,9-HxCDD	0.903	0.173	X	0.96	1.009	1.23
1,2,3,4,6,7,8-HpCDD	9.740	0.584		1.10	1.000	1.24
OCDD	135.469	0.489	B	0.89	1.001	1.20
2,3,7,8-TCDF	*	0.073	U	*	*	1.18
1,2,3,7,8-PeCDF	*	0.133	U	*	*	1.08
2,3,4,7,8-PeCDF	*	0.135	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.141	U	*	*	1.36
1,2,3,6,7,8-HxCDF	1.793	0.132	X	1.52	1.003	1.45
1,2,3,7,8,9-HxCDF	*	0.181	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	0.147	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	12.706	0.150		1.01	1.000	1.70
1,2,3,4,7,8,9-HpCDF	*	0.227	U	*	*	1.13
OCDF	13.489	0.552		0.92	1.002	1.49
Total Tetra-Dioxins	*	0.084	U			
Total Penta-Dioxins	*	0.173	U			
Total Hexa-Dioxins	*	0.179	U			
Total Hepta-Dioxins	*	0.584	U			
Total Tetra-Furans	18.915	0.073				
Total Penta-Furans	6.851	0.135				
Total Hexa-Furans	6.745	0.132				
Total Hepta-Furans	28.328	0.150				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

S06

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 45826

Client Name: USEPA5 Lab Sample ID: 45826.08

Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 15.20 g or mL: g

Sample Receipt Date: 02-13-01 Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 04:43:38 GC Column ID: DB-5

Extract Volume(ul): 20.0 Sample Data Filename: A0145 #5

Injection Volume(ul): 2.00 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	0.90	X 0.1	9.03e-02
1,2,3,4,6,7,8-HpCDD	9.74	X 0.01	9.74e-02
OCDD	135.47	X 0.001	1.35e-01
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	1.79	X 0.1	1.79e-01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	12.71	X 0.01	1.27e-01
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	13.49	X 0.001	1.35e-02

Total: 6.431e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S07

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.09

Client Name: USEPA5 Sample Wt/Vol: 15.24 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #6

Analysis Date: 9-MAR-01 Time: 05:32:20 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.068	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.138	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.217	U	*	*	0.83
1,2,3,6,7,8-HxCDD	0.767	0.152	X	1.63	1.000	1.18
1,2,3,7,8,9-HxCDD	0.916	0.147		1.38	1.009	1.23
1,2,3,4,6,7,8-HpCDD	15.933	0.543		1.09	1.001	1.24
OCDD	174.976	0.319	B	0.93	1.001	1.20
2,3,7,8-TCDF	*	0.098	U	*	*	1.18
1,2,3,7,8-PeCDF	*	0.196	U	*	*	1.08
2,3,4,7,8-PeCDF	*	0.200	U	*	*	1.07
1,2,3,4,7,8-HxCDF	*	0.092	U	*	*	1.36
1,2,3,6,7,8-HxCDF	2.079	0.086	I	1.29	1.003	1.45
1,2,3,7,8,9-HxCDF	*	0.117	U	*	*	1.06
2,3,4,6,7,8-HxCDF	0.152	0.095		1.37	1.021	1.31
1,2,3,4,6,7,8-HpCDF	4.690	0.521	X	1.30	1.000	1.70
1,2,3,4,7,8,9-HpCDF	*	0.787	U	*	*	1.13
OCDF	9.605	1.652		0.87	1.003	1.49
Total Tetra-Dioxins	*	0.068	U			
Total Penta-Dioxins	*	0.138	U			
Total Hexa-Dioxins	1.037	0.152				
Total Hepta-Dioxins	*	0.543	U			
Total Tetra-Furans	1.018	0.098				
Total Penta-Furans	2.512	0.200				
Total Hexa-Furans	13.689	0.086				
Total Hepta-Furans	12.694	0.521				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.
S07

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA — Episode No.: 45826

Client Name: USEPA5 — Lab Sample ID: 45825.09

Matrix (aqueous/solid/leachate): solid — Sample Wt/Vol: 15.24 g or mL: g

Sample Receipt Date: 02-13-01 — Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: — Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 05:32:20 — GC Column ID: DB-5

Extract Volume(ul): 20.0 — Sample Data Filename: A0145 #6

Injection Volume(ul): 2.00 — Blank Data Filename: A0145 #3

Dilution Factor: 1 — Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.77	X 0.1	7.67e-02
1,2,3,7,8,9-HxCDD	0.92	X 0.1	9.16e-02
1,2,3,4,6,7,8-HpCDD	15.93	X 0.01	1.59e-01
OCDD	174.98	X 0.001	1.75e-01
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	2.08	X 0.1	2.08e-01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	0.15	X 0.1	1.52e-02
1,2,3,4,6,7,8-HpCDF	4.69	X 0.01	4.69e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	9.60	X 0.001	9.61e-03

Total: 7.822e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S08

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.10

Client Name: USEPA5 Sample Wt/Vol: 15.36 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #7

Analysis Date: 9-MAR-01 Time: 06:21:02 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.069	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.146	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.256	U	*	*	0.83
1,2,3,6,7,8-HxCDD	*	0.180	U	*	*	1.18
1,2,3,7,8,9-HxCDD	*	0.173	U	*	*	1.23
1,2,3,4,6,7,8-HpCDD	3.955	0.130		0.94	1.000	1.24
OCDD	37.300	0.809	B	0.85	1.000	1.20
2,3,7,8-TCDF	*	0.102	U	*	*	1.18
1,2,3,7,8-PeCDF	*	0.074	U	*	*	1.08
2,3,4,7,8-PeCDF	*	0.075	U	*	*	1.07
1,2,3,4,7,8-HxCDF	0.195	0.078	X	0.93	1.000	1.36
1,2,3,6,7,8-HxCDF	0.215	0.073		1.37	1.003	1.45
1,2,3,7,8,9-HxCDF	*	0.099	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	0.080	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	0.504	0.308		0.62	1.001	1.70
1,2,3,4,7,8,9-HpCDF	*	0.466	U	*	*	1.13
OCDF	*	0.684	U	*	*	1.49
Total Tetra-Dioxins	*	0.069	U			
Total Penta-Dioxins	*	0.146	U			
Total Hexa-Dioxins	*	0.180	U			
Total Hepta-Dioxins	*	0.130	U			
Total Tetra-Furans	*	0.102	U			
Total Penta-Furans	*	0.075	U			
Total Hexa-Furans	1.312	0.073				
Total Hepta-Furans	*	0.308	U			

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.
S08

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA Episode No.: 45826

Client Name: USEPA5 Lab Sample ID: 45825.10

Matrix (aqueous/solid/leachate): solid Sample Wt/Vol: 15.36 g or mL: g

Sample Receipt Date: 02-13-01 Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 06:21:02 GC Column ID: DB-5

Extract Volume(ul): 20.0 Sample Data Filename: A0145 #7

Injection Volume(ul): 2.00 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	*	X 0.1	*
1,2,3,7,8,9-HxCDD	*	X 0.1	*
1,2,3,4,6,7,8-HpCDD	3.96	X 0.01	3.96e-02
OCDD	37.30	X 0.001	3.73e-02
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	*	X 0.05	*
2,3,4,7,8-PeCDF	*	X 0.5	*
1,2,3,4,7,8-HxCDF	0.20	X 0.1	1.95e-02
1,2,3,6,7,8-HxCDF	0.22	X 0.1	2.15e-02
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	0.50	X 0.01	5.04e-03
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 1.229e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
S09

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.11

Client Name: USEPA5 Sample Wt/Vol: 15.20 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #8

Analysis Date: 9-MAR-01 Time: 07:09:44 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	0.394	0.037	X	0.09	1.001	1.51
1,2,3,7,8-PeCDD	0.503	0.159	X	1.91	1.000	1.11
1,2,3,4,7,8-HxCDD	*	0.344	U	*	*	0.83
1,2,3,6,7,8-HxCDD	27.349	0.242		1.23	1.000	1.18
1,2,3,7,8,9-HxCDD	4.133	0.233		1.13	1.009	1.23
1,2,3,4,6,7,8-HpCDD	479.067	7.128		1.04	1.000	1.24
OCDD	9210.704	1.468	B	0.89	0.999	1.20
2,3,7,8-TCDF	3.632	0.065	C	0.74	1.001	1.18
1,2,3,7,8-PeCDF	0.602	0.143		1.55	1.001	1.08
2,3,4,7,8-PeCDF	0.815	0.146		1.42	1.034	1.07
1,2,3,4,7,8-HxCDF	*	1.139	U	*	*	1.36
1,2,3,6,7,8-HxCDF	12.179	1.065	I	1.23	1.003	1.45
1,2,3,7,8,9-HxCDF	*	1.457		*	*	1.06
2,3,4,6,7,8-HxCDF	1.762	1.182		1.19	1.022	1.31
1,2,3,4,6,7,8-HpCDF	49.202	1.413		1.04	1.000	1.70
1,2,3,4,7,8,9-HpCDF	2.263	2.133		0.96	1.037	1.13
CCDF	124.496	58.894		0.87	1.000	1.49
Total Tetra-Dioxins	1.441	0.037				
Total Penta-Dioxins	*	0.159	U			
Total Hexa-Dioxins	74.033	0.242				
Total Hepta-Dioxins	*	7.128	U			
Total Tetra-Furans	6.024	0.065				
Total Penta-Furans	16.682	0.146				
Total Hexa-Furans	224.610	1.065				
Total Hepta-Furans	227.853	1.413				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

S09

Lab Name: SOUTHWEST LAB. OF OKLAHOMA | Episode No.: 45826

Client Name: USEPA5 | Lab Sample ID: 45826.11

Matrix (aqueous/solid/leachate): solid | Sample Wt/Vol: 15.20 g or mL: g

Sample Receipt Date: 02-13-01 | Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: | Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 07:09:44 | GC Column ID: DB-5

Extract Volume(ul): 20.0 | Sample Data Filename: A0145 #8

Injection Volume(ul): 2.00 | Blank Data Filename: A0145 #3

Dilution Factor: 1 | Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	0.39	X 1.0	3.94e-01
1,2,3,7,8-PeCDD	0.50	X 0.5	2.51e-01
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	27.35	X 0.1	2.73e+00
1,2,3,7,8,9-HxCDD	4.13	X 0.1	4.13e-01
1,2,3,4,6,7,8-HpCDD	479.07	X 0.01	4.79e+00
OCDD	9210.70	X 0.001	9.21e+00
2,3,7,8-TCDF	3.63	X 0.1	3.63e-01
1,2,3,7,8-PeCDF	0.60	X 0.05	3.01e-02
2,3,4,7,8-PeCDF	0.82	X 0.5	4.08e-01
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	12.18	X 0.1	1.22e+00
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	1.76	X 0.1	1.76e-01
1,2,3,4,6,7,8-HpCDF	49.20	X 0.01	4.92e-01
1,2,3,4,7,8,9-HpCDF	2.26	X 0.01	2.26e-02
OCDF	124.50	X 0.001	1.24e-01

Total: 2.063e+01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

CLIENT ID.

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results SL0

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.12

Client Name: USEPA5 Sample Wt/Vol: 15.00 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20 Inj. Vol(ul):1 Sample Data Filename: A0145 #9

Analysis Date: 9-MAR-01 Time: 07:58:26 Blank Data Filename: A0145 #3

Dilution Factor: 1 Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	3.719	0.284	X	0.10	1.001	1.51
1,2,3,7,8-PeCDD	3.431	1.151	X	2.17	1.001	1.11
1,2,3,4,7,8-HxCDD	5.780	2.202	X	1.62	0.997	0.83
1,2,3,6,7,8-HxCDD	225.218	1.547		1.24	1.000	1.18
1,2,3,7,8,9-HxCDD	34.547	1.490		1.25	1.009	1.23
1,2,3,4,6,7,8-HpCDD	3711.476	106.271		1.04	1.000	1.24
OCDD	*	*	U	*	*	1.20
2,3,7,8-TCDF	31.274	0.319	C	0.74	1.001	1.18
1,2,3,7,8-PeCDF	4.551	0.508	X	1.87	1.001	1.08
2,3,4,7,8-PeCDF	6.389	0.517		1.60	1.034	1.07
1,2,3,4,7,8-HxCDF	*	1.234	U	*	*	1.36
1,2,3,6,7,8-HxCDF	104.173	1.154	I	1.19	1.003	1.45
1,2,3,7,8,9-HxCDF	*	1.578	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	1.280	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	398.677	12.926		0.94	0.999	1.70
1,2,3,4,7,8,9-HpCDF	*	19.512	U	*	*	1.13
OCDF	*	*	U	*	*	1.49
Total Tetra-Dioxins	12.243	0.284				
Total Penta-Dioxins	*	1.151	U			
Total Hexa-Dioxins	685.751	1.547				
Total Hepta-Dioxins	*	106.271	U			
Total Tetra-Furans	50.574	0.319				
Total Penta-Furans	133.275	0.517				
Total Hexa-Furans	665.928	1.154				
Total Hepta-Furans	478.733	12.926				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

S10

Lab Name: SOUTHWEST LAB. OF OKLAHOMA | Episode No.: 45826

Client Name: USEPA5 | Lab Sample ID: 45826.12

Matrix (aqueous/solid/leachate): solid | Sample Wt/Vol: 15.00 g or mL: g

Sample Receipt Date: 02-13-01 | Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift: | Instrument ID: AutcSpec

Analysis Date: 9-MAR-01 Time: 07:58:26 | GC Column ID: DB-5

Extract Volume(ul): 20.0 | Sample Data Filename: A0145 #9

Injection Volume(ul): 2.00 | Blank Data Filename: A0145 #3

Dilution Factor: 1 | Cal. Ver. Data Filename: A0142 #1

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture:

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	3.72	X 1.0	3.72e+00
1,2,3,7,8-PeCDD	3.43	X 0.5	1.72e+00
1,2,3,4,7,8-HxCDD	5.78	X 0.1	5.78e-01
1,2,3,6,7,8-HxCDD	225.22	X 0.1	2.25e+01
1,2,3,7,8,9-HxCDD	34.55	X 0.1	3.45e+00
1,2,3,4,6,7,8-HpCDD	3711.48	X 0.01	3.71e+01
OCDD	*	X 0.001	*
2,3,7,8-TCDF	31.27	X 0.1	3.13e+00
1,2,3,7,8-PeCDF	4.55	X 0.05	2.28e-01
2,3,4,7,8-PeCDF	6.39	X 0.5	3.19e+00
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	104.17	X 0.1	1.04e+01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	398.68	X 0.01	3.99e+00
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 9.006e+01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

6/90

Form 1

PCDD/PCDF ANALYSIS DATA SHEET
Use for Sample and Blank Results

CLIENT ID.
D01

Lab Name: Southwest Lab. of Oklahoma Episode No.: 45826

Lab Code: SWL Case No.: SDG No.: Lab Sample ID: 45826.13

Client Name: USEPA5 Sample Wt/Vol: 15.59 g or mL: g

Matrix (aqueous/solid/leachate): solid Initial Calibration Date: 02-26-01

Sample Receipt Date: 02-13-01 Instrument ID: AutoSpec

Ext. Date: 02-14-01 GC Column:DB-5

Ext. Vol(ul):20.0 Inj. Vol(ul):1.0 Sample Data Filename: A0149 #5

Analysis Date: 9-MAR-01 Time: 17:51:19 Blank Data Filename: A0149#4

Dilution Factor: 1 Cal. Ver. Data Filename: A0149#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 23.37

ANALYTE	CONCENTRATION FOUND	DETECTION LIMIT	Qual. (1)	ION ABUND. RATIO (2)	RRT (2)	MEAN RRF
2,3,7,8-TCDD	*	0.079	U	*	*	1.51
1,2,3,7,8-PeCDD	*	0.141	U	*	*	1.11
1,2,3,4,7,8-HxCDD	*	0.328	U	*	*	0.83
1,2,3,6,7,8-HxCDD	0.461	0.230		1.23	1.000	1.18
1,2,3,7,8,9-HxCDD	0.450	0.222	X	1.90	1.009	1.23
1,2,3,4,6,7,8-HpCDD	11.215	1.229		1.05	1.000	1.24
OCDD	204.652	18.218		0.98	1.000	1.20
2,3,7,8-TCDF	*	0.087	U	*	*	1.18
1,2,3,7,8-PeCDF	0.278	0.072	I	1.41	1.001	1.08
2,3,4,7,8-PeCDF	0.187	0.073	X	1.00	1.035	1.07
1,2,3,4,7,8-HxCDF	*	0.124	U	*	*	1.36
1,2,3,6,7,8-HxCDF	1.698	0.116	X	1.58	1.003	1.45
1,2,3,7,8,9-HxCDF	*	0.159	U	*	*	1.06
2,3,4,6,7,8-HxCDF	*	0.129	U	*	*	1.31
1,2,3,4,6,7,8-HpCDF	9.031	0.376		1.03	1.000	1.70
1,2,3,4,7,8,9-HpCDF	*	0.567	U	*	*	1.13
OCDF	*	0.796	U	*	*	1.49
Total Tetra-Dioxins	*	0.079	U			
Total Penta-Dioxins	*	0.141	U			
Total Hexa-Dioxins	0.461	0.230				
Total Hepta-Dioxins	20.579	1.229				
Total Tetra-Furans	1.450	0.087				
Total Penta-Furans	6.814	0.073				
Total Hexa-Furans	6.138	0.116				
Total Hepta-Furans	23.483	0.376				

(1) Qualifiers: U and * - not detected; X & I - EMPC. C - use value from second column analysis. B - possible blank contamination.
(2) RRTs and ion ratios are specified in Tables 11 and 8, Method 8290. 8290F1

EPA SAMPLE NO.
D01

PCDD/PCDF TOXICITY EQUIVALENCE SUMMARY
Use for Sample and Blank Results

Lab Name: SOUTHWEST LAB. OF OKLAHOMA
Episode No.: 45826

Client Name: USEPA5
Lab Sample ID: 45826.13

Matrix (aqueous/solid/leachate): solid
Sample Wt/Vol: 15.59 g or mL: g

Sample Receipt Date: 02-13-01
Initial Calibration Date: 02-26-01

Ext. Date: 02-14-01 Shift:
Instrument ID: AutoSpec

Analysis Date: 9-MAR-01 Time: 17:51:19
GC Column ID: DB-5

Extract Volume(ul): 20.0
Sample Data Filename: A0149 #5

Injection Volume(ul): 2.00
Blank Data Filename: A0149#4

Dilution Factor: 1
Cal. Ver. Data Filename: A0149#2

Concentration Units (pg/L or ng/Kg dry weight): ng/Kg % Moisture: 23.37

	CONCENTRATION	TEF(1)	TEF-ADJUSTED CONCENTRATION
2,3,7,8-TCDD	*	X 1.0	*
1,2,3,7,8-PeCDD	*	X 0.5	*
1,2,3,4,7,8-HxCDD	*	X 0.1	*
1,2,3,6,7,8-HxCDD	0.46	X 0.1	4.61e-02
1,2,3,7,8,9-HxCDD	0.45	X 0.1	4.50e-02
1,2,3,4,6,7,8-HpCDD	11.21	X 0.01	1.12e-01
OCDD	204.65	X 0.001	2.05e-01
2,3,7,8-TCDF	*	X 0.1	*
1,2,3,7,8-PeCDF	0.28	X 0.05	1.39e-02
2,3,4,7,8-PeCDF	0.19	X 0.5	9.34e-02
1,2,3,4,7,8-HxCDF	*	X 0.1	*
1,2,3,6,7,8-HxCDF	1.70	X 0.1	1.70e-01
1,2,3,7,8,9-HxCDF	*	X 0.1	*
2,3,4,6,7,8-HxCDF	*	X 0.1	*
1,2,3,4,6,7,8-HpCDF	9.03	X 0.01	9.03e-02
1,2,3,4,7,8,9-HpCDF	*	X 0.01	*
OCDF	*	X 0.001	*

Total: 7.754e-01

(1) Taken from 'Interim Procudures for Estimating Risks Associated with Exposures to Mixtures of Chlorinated Dibenzo-p-Dioxin and -Dibenzofurans (CDDs and CDFs) and 1989 Udate(EPA/625/3-89/016, March 1989.'

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V
ESD Central Regional Laboratory
Data Tracking Form for Contract Samples

Sample Delivery Group: 45826 CERCLIS No: _____

Case No: 20C1TC01 Site Name/Location: Celotex Corp

Contractor or EPA Lab: AATS - SWOK Data User: Tetra Tech

No. of Samples: 11 Date Sampled or Date Received: _____

Have Chain-of-Custody records been received? Yes _____ No _____
Have traffic reports or packing lists been received? Yes _____ No _____
If no, are traffic report or packing list numbers written on the Chain-of-Custody Record?
Yes _____ No _____
If no, which traffic report or packing list numbers are missing?

_____ _____ _____ _____
_____ _____ _____ _____

Are basic data forms in? Yes _____ No _____
No of samples claimed: _____ No. of samples received: _____

Received by: _____ Date: _____

Received by LSSS: _____ Date: _____

Review started: 4-14-01 Reviewer Signature: Allison C Harvey

Total time spent on review: 16 hrs Date review completed: 4-17-01

Copied by: Eva H. Dixon / ESAT Date: 4-30-01

Mailed to user by: Eva H. Dixon / ESAT Date: 4-30-01

DATA USER:
Please fill in the blanks below and return this form to:
Sylvia Griffin, Data Mgmt. Coordinator, Region V, ML-10C

Data received by: _____ Date: _____

Data review received by: _____ Date: _____

Inorganic Data Complete	[ ] Suitable for Intended Purpose [ ] ✓ if OK
Organic Data Complete	[ ] Suitable for Intended Purpose [ ] ✓ if OK
Dioxin data Complete	[ ] Suitable for Intended Purpose [ ] ✓ if OK
SAS Data Complete	[ ] Suitable for Intended Purpose [ ] ✓ if OK

PROBLEMS: Please indicate reasons why data are not suitable for your uses.

_____
_____

Received by Data Mgmt. Coordinator for Files. Date: _____